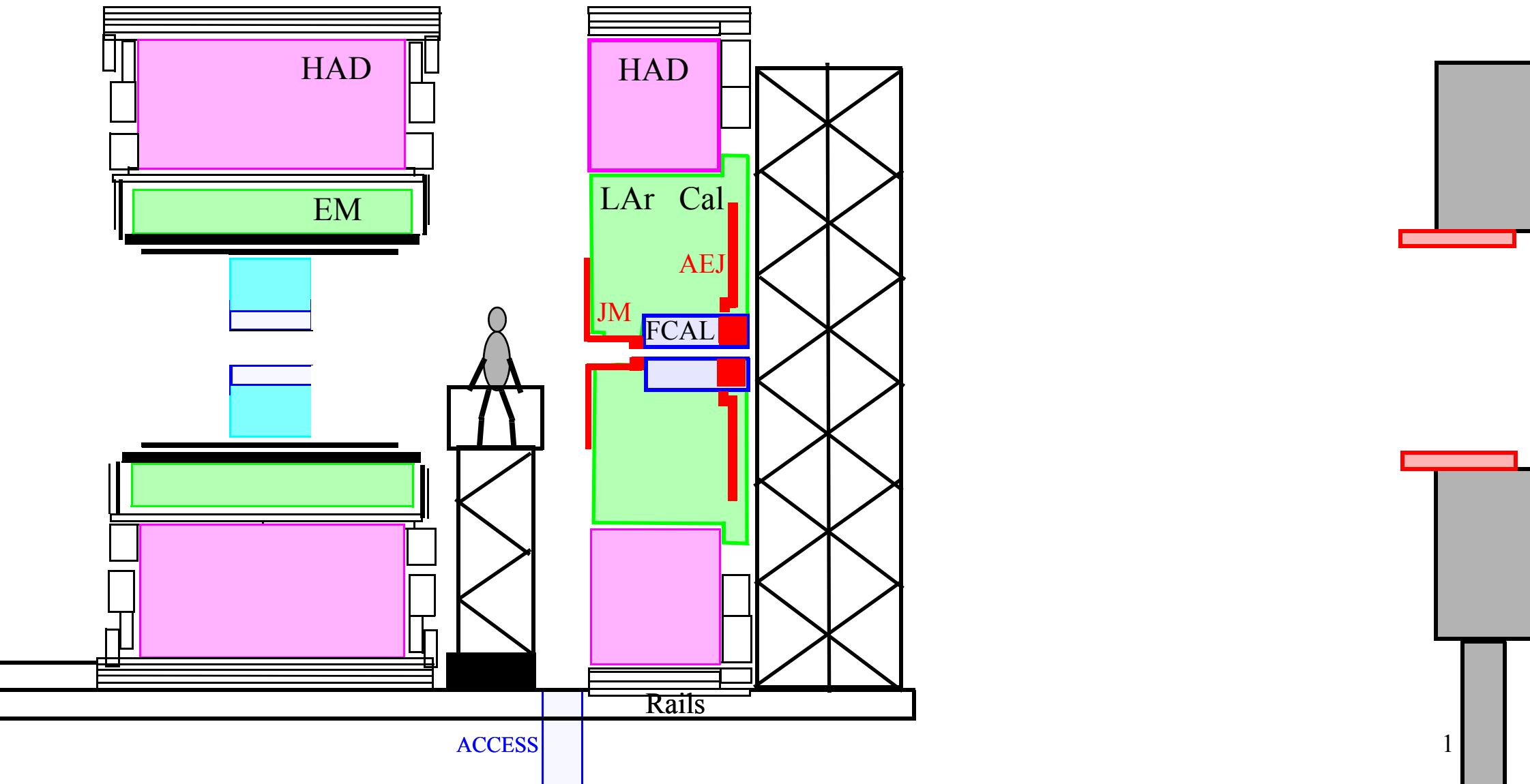
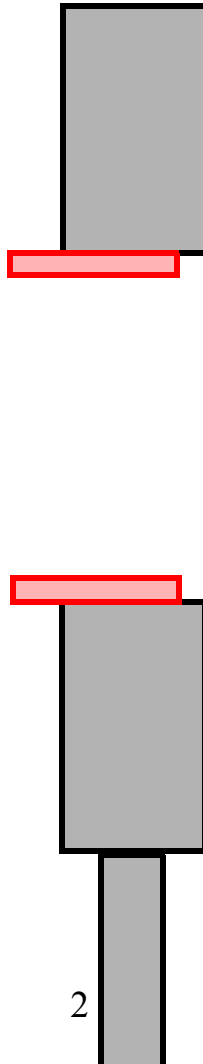
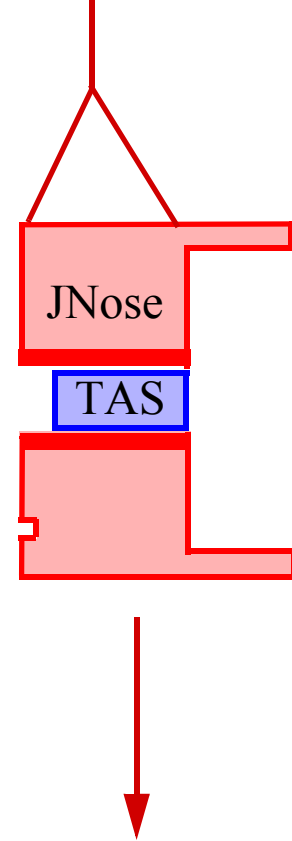
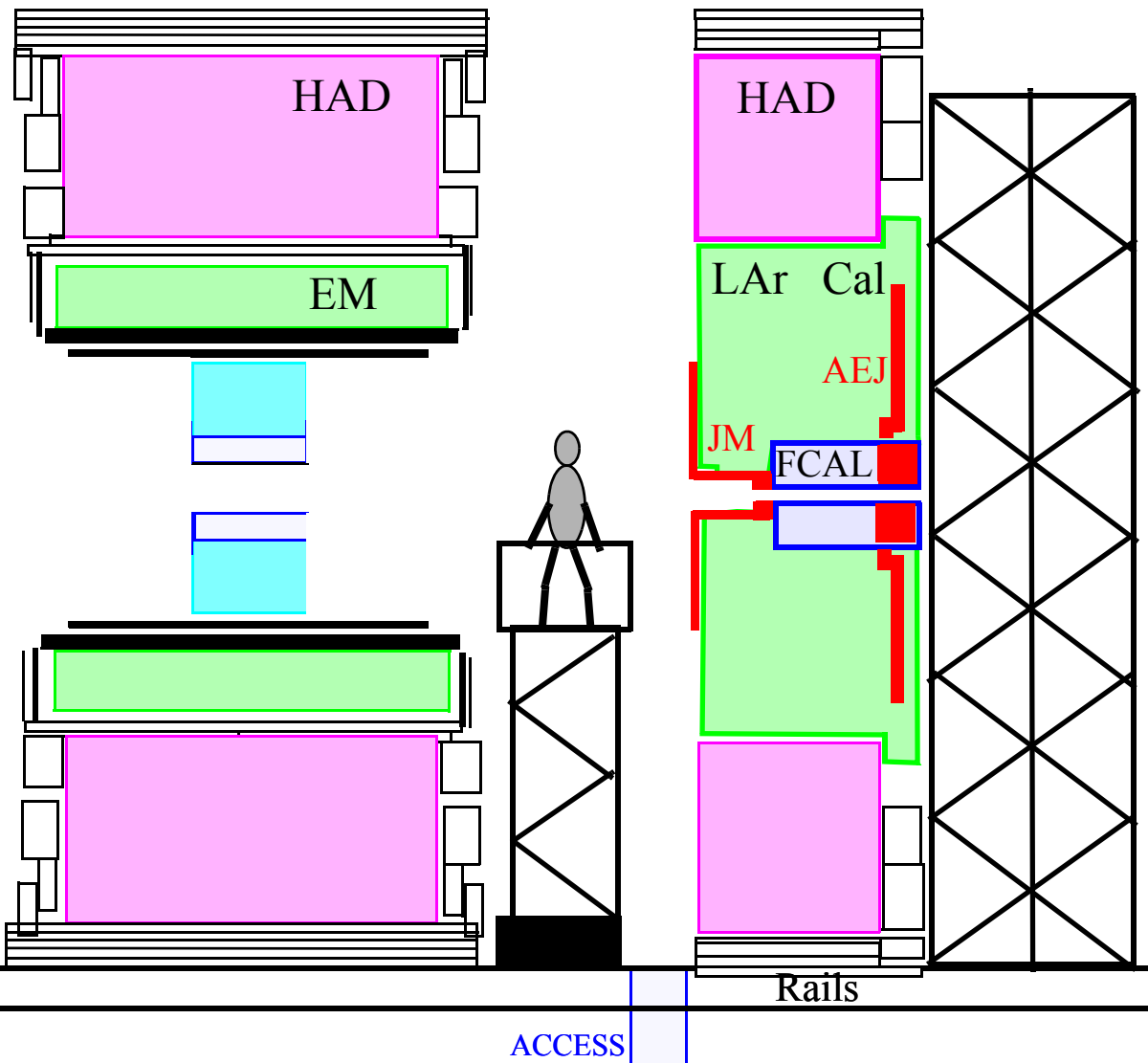
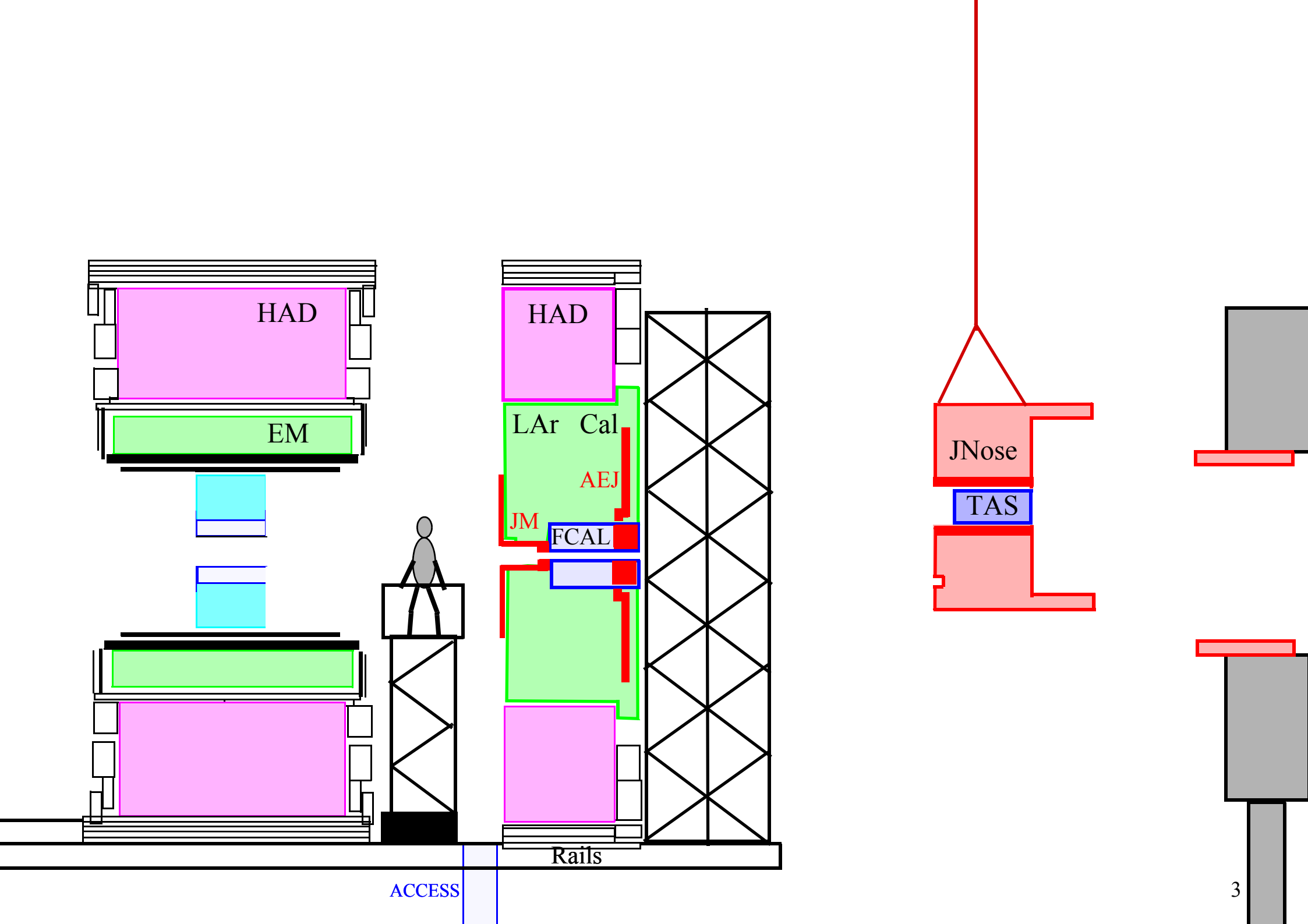


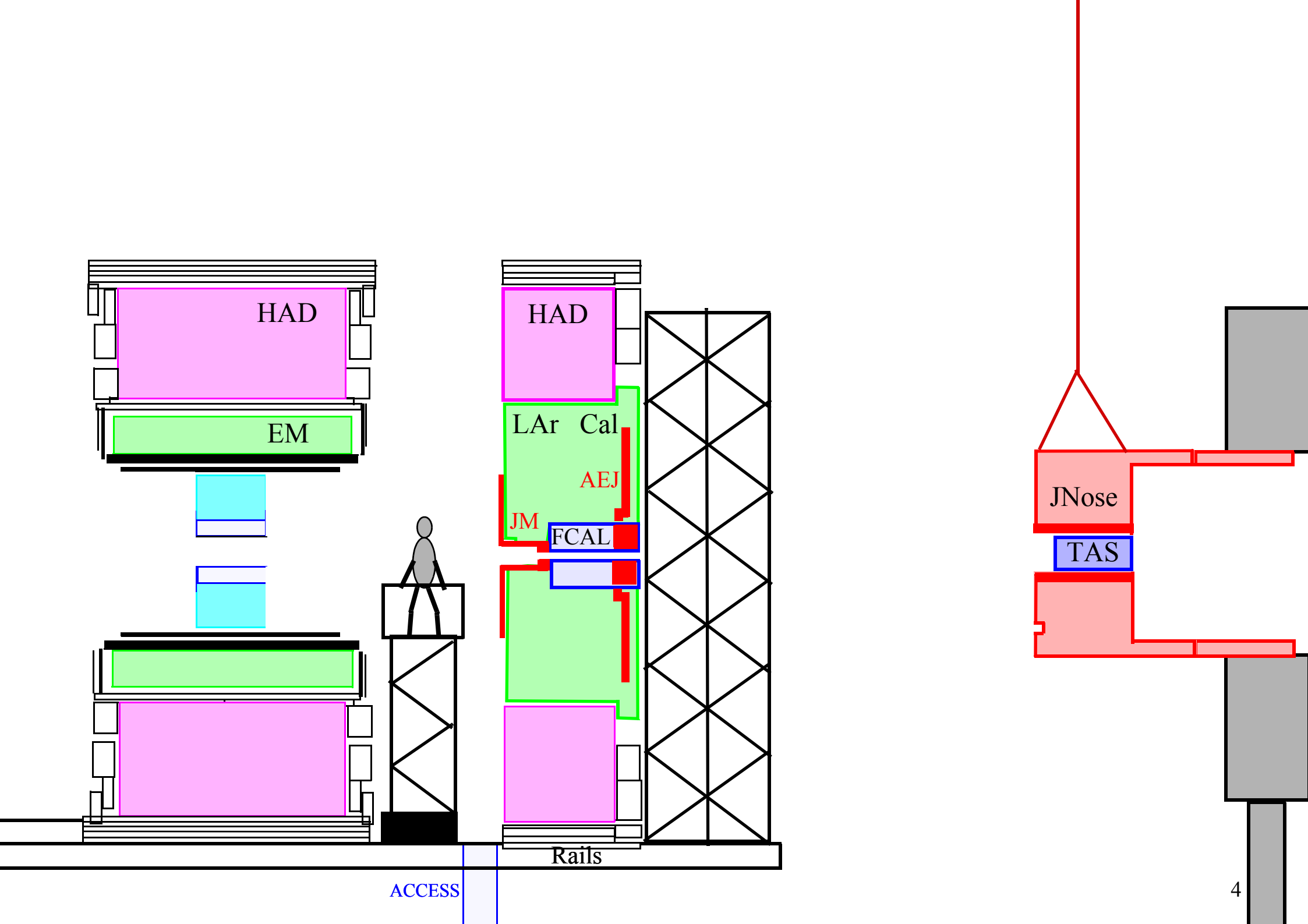
Side A

The scenario starts with the installation of the JN monobloc in December 2006 !









ACCESS

RAILS

JNose

TAS

HAD

EM

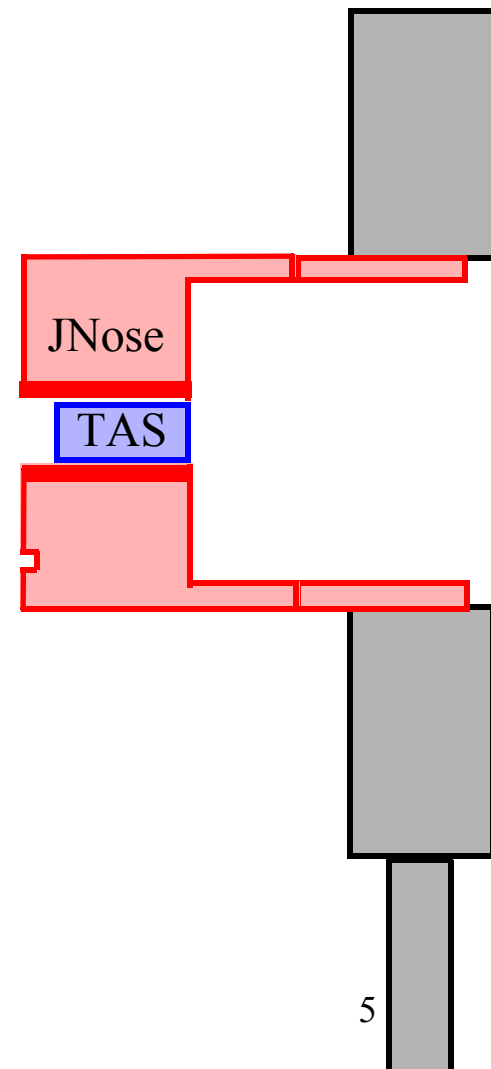
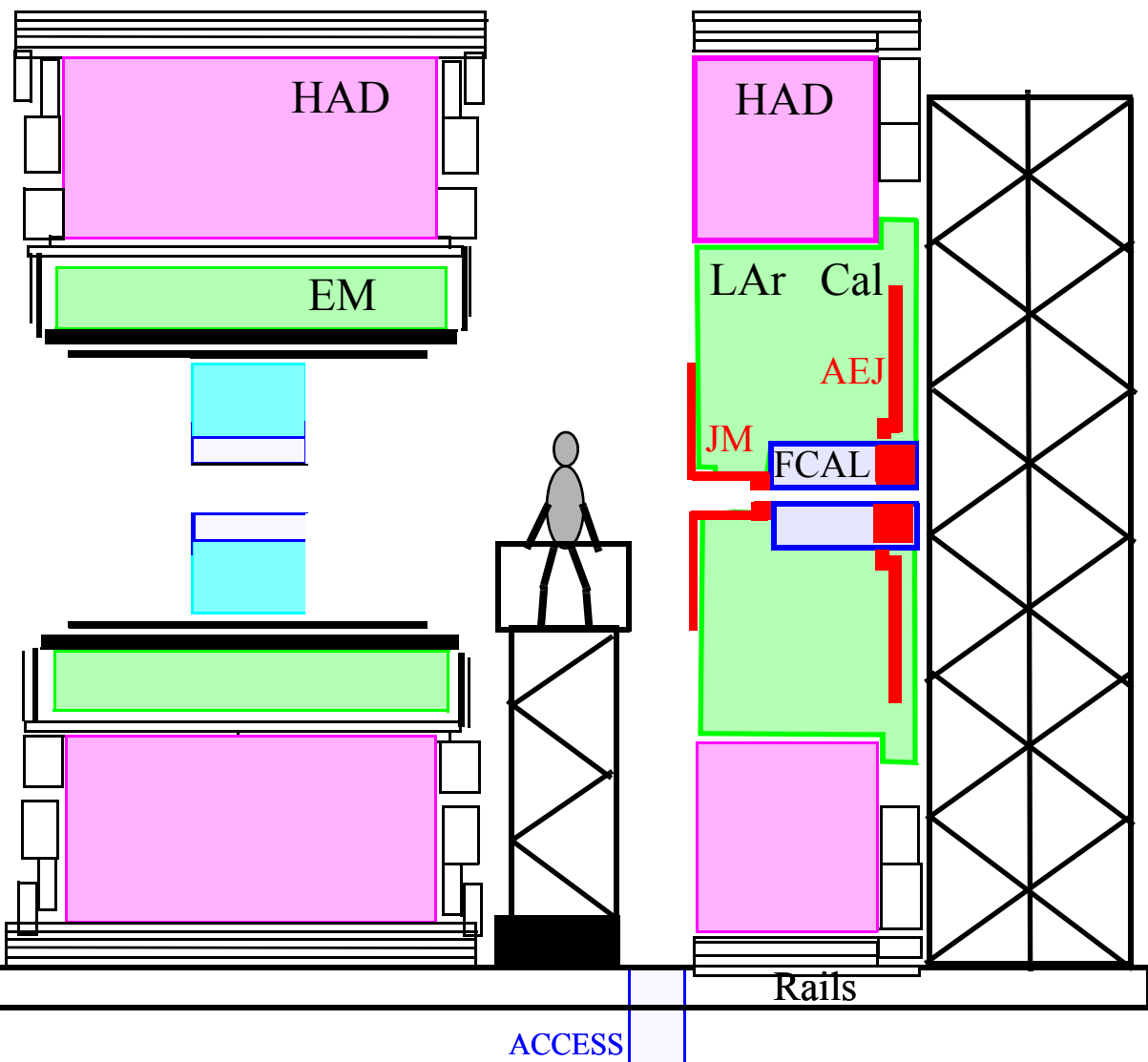
HAD

LAr Cal

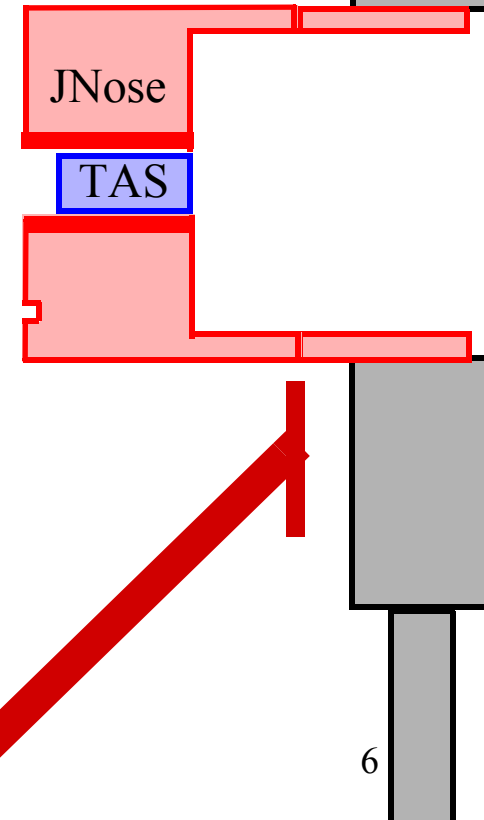
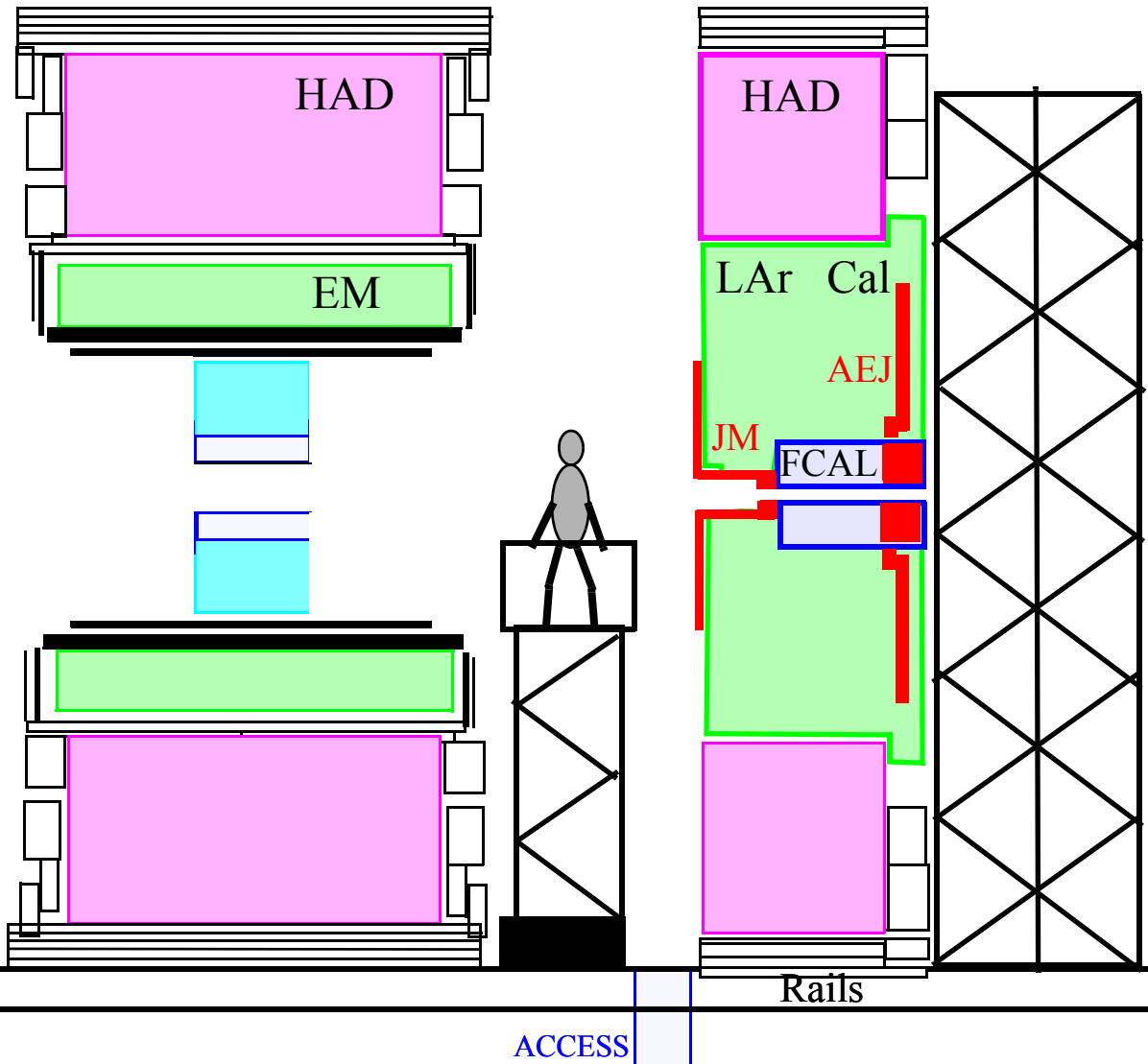
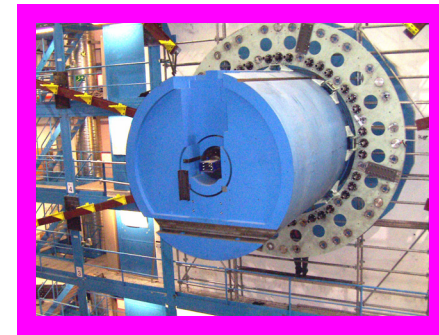
AEJ

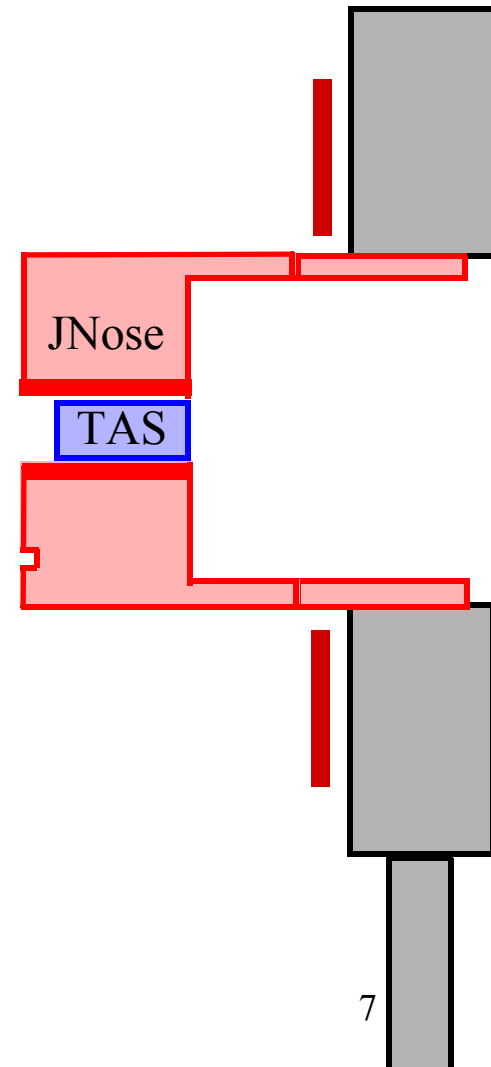
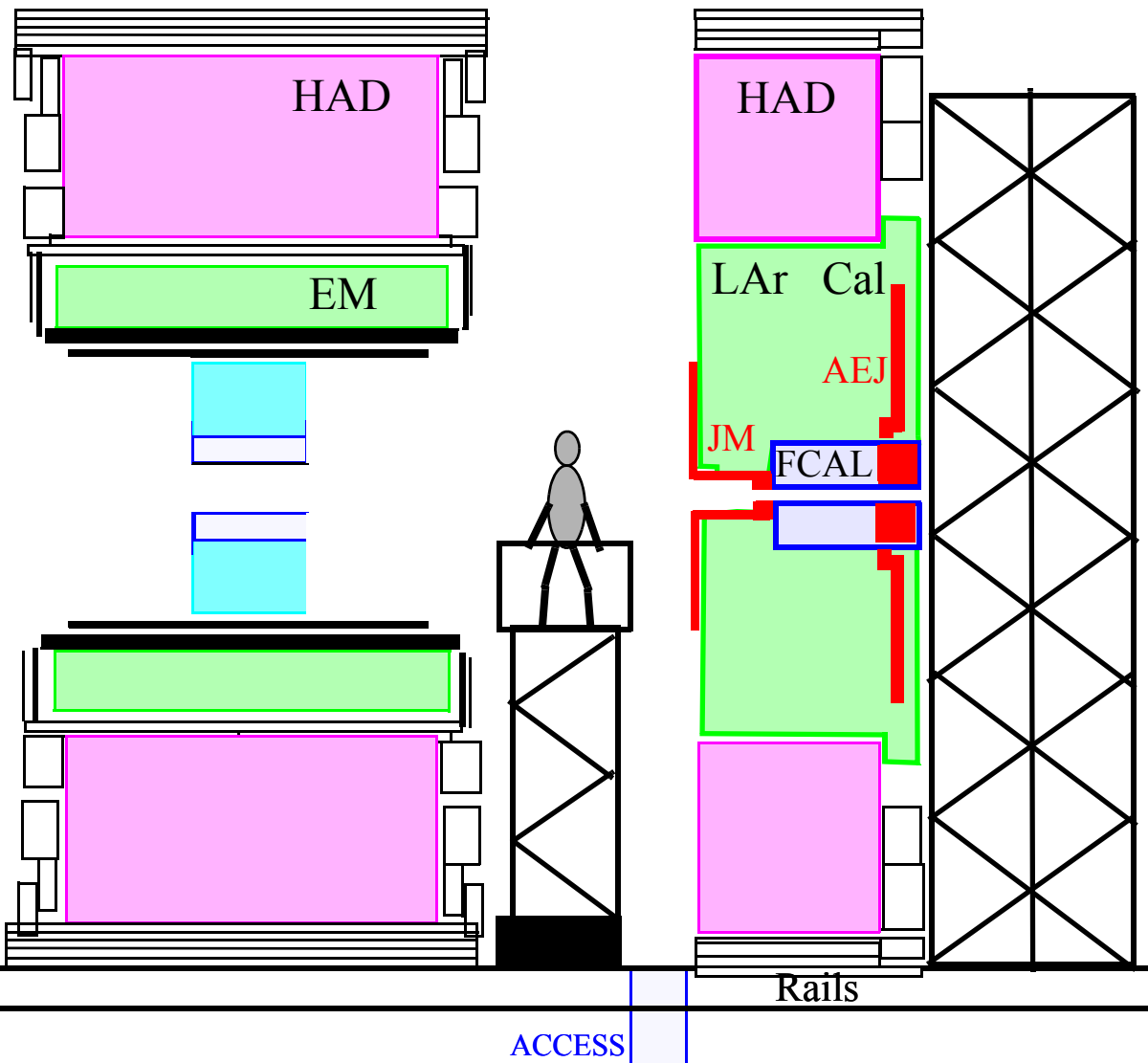
JM

FCAL

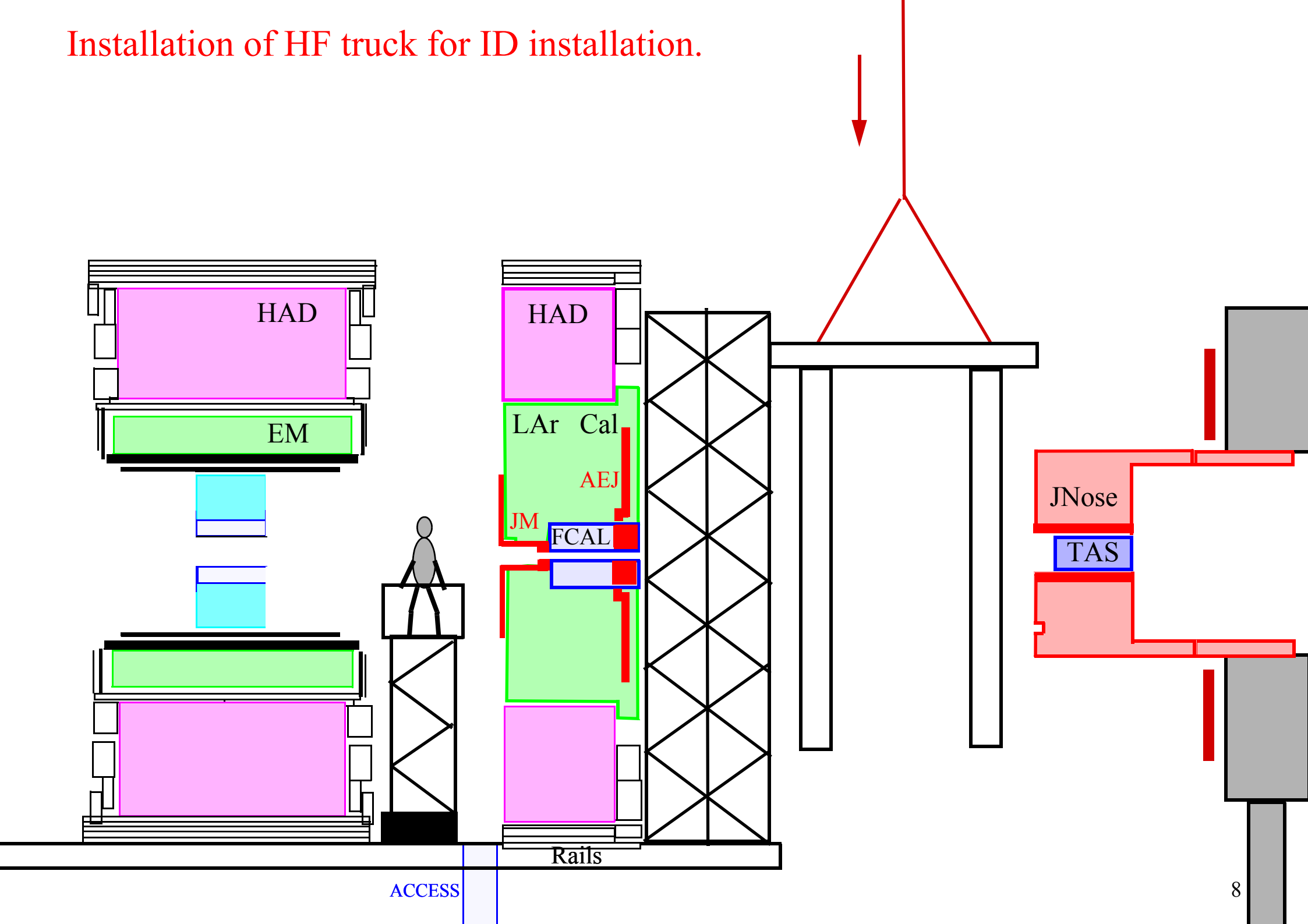


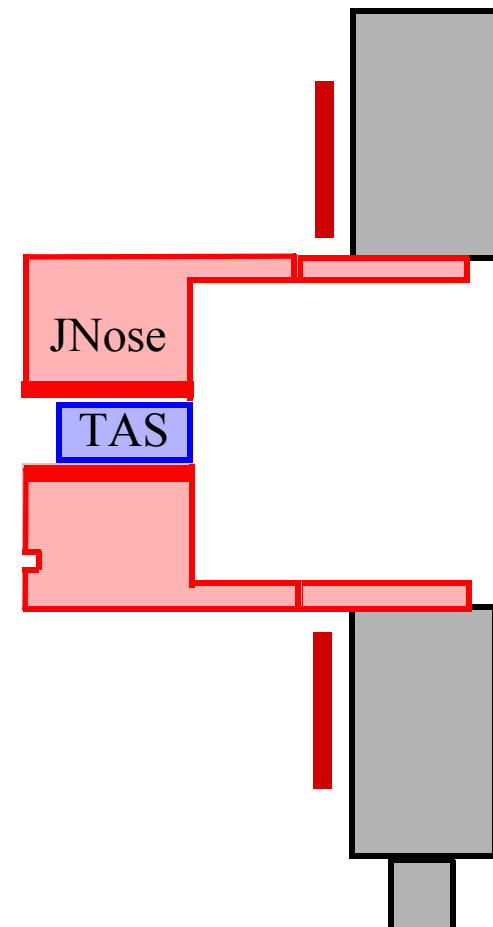
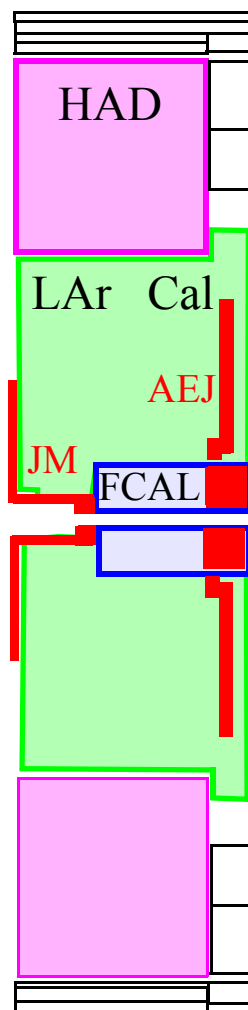
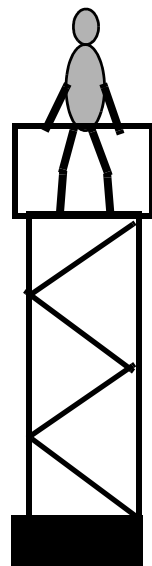
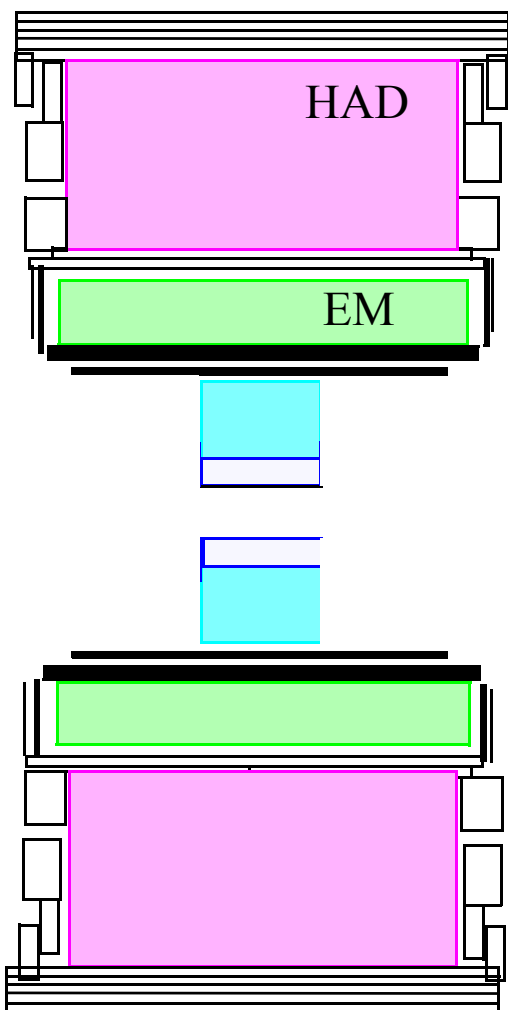
Installation of tooling for BW.





Installation of HF truck for ID installation.

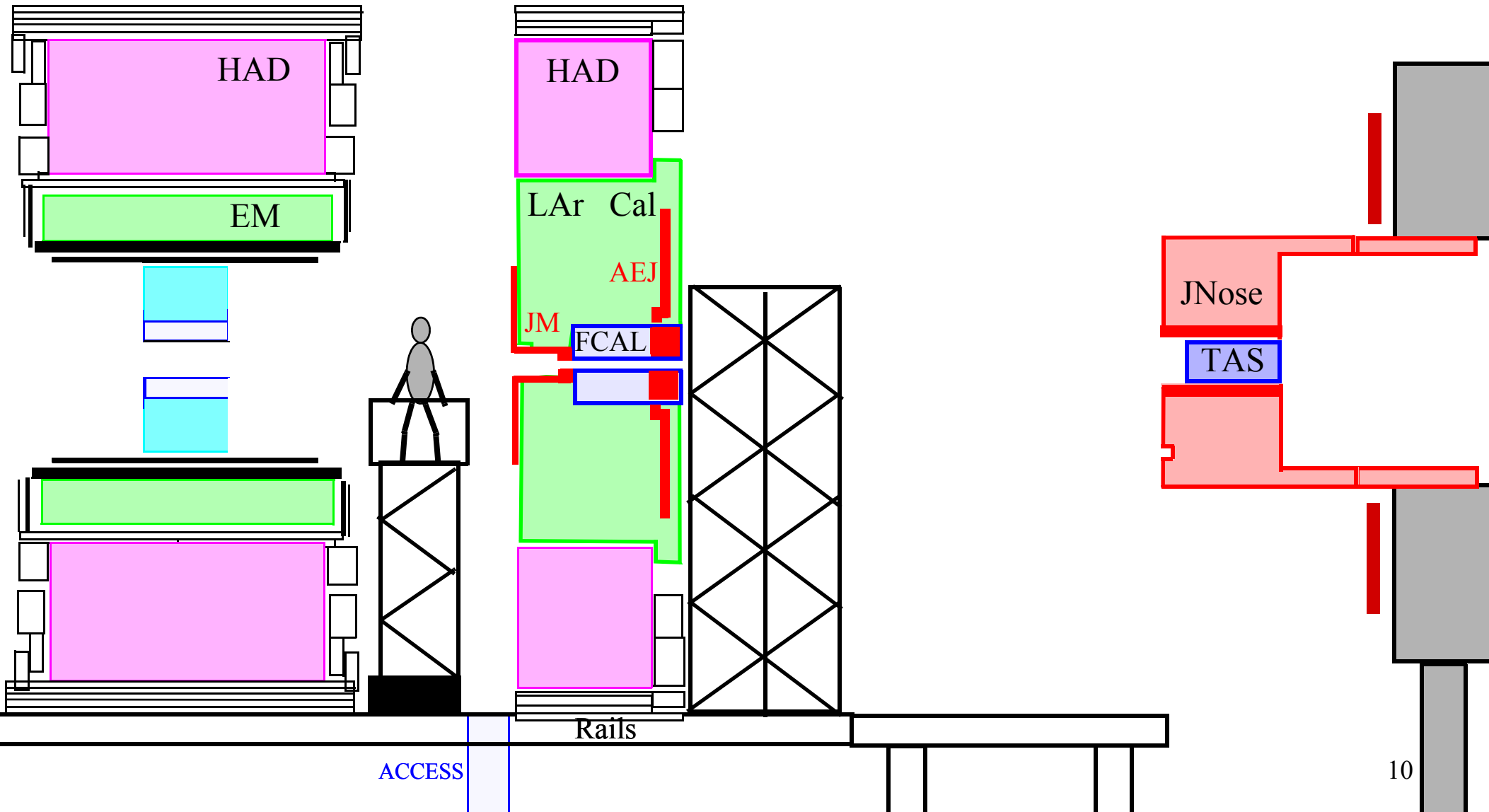


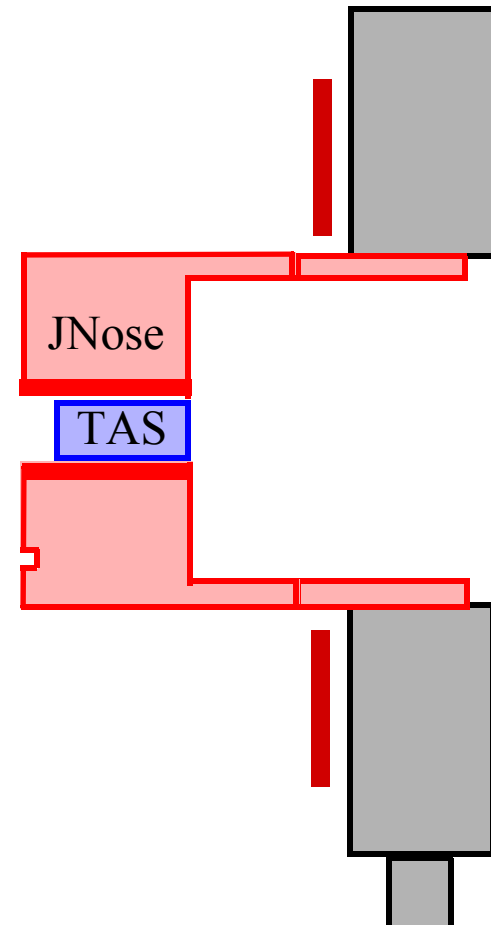
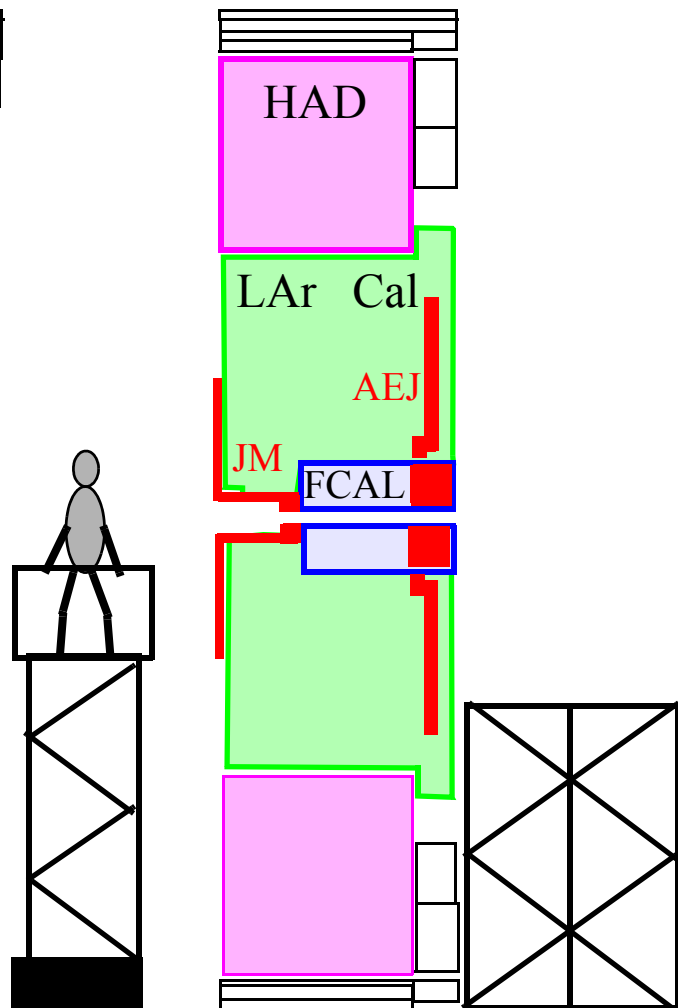
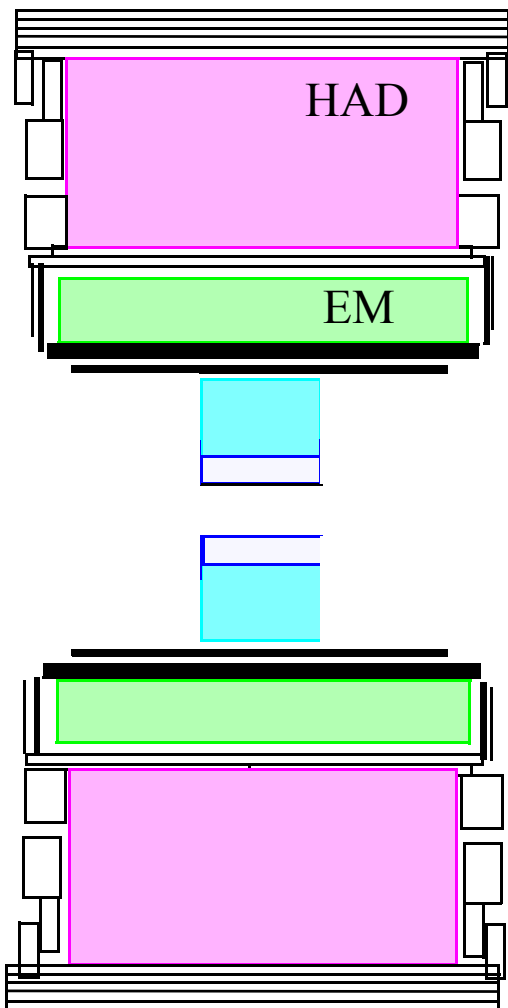


ACCESS

Rails

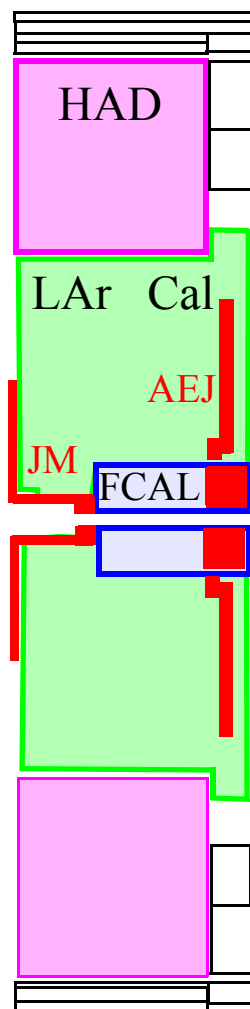
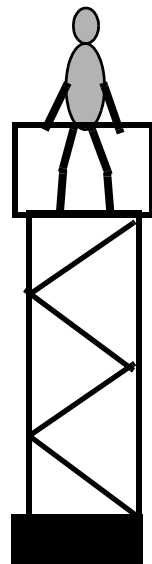
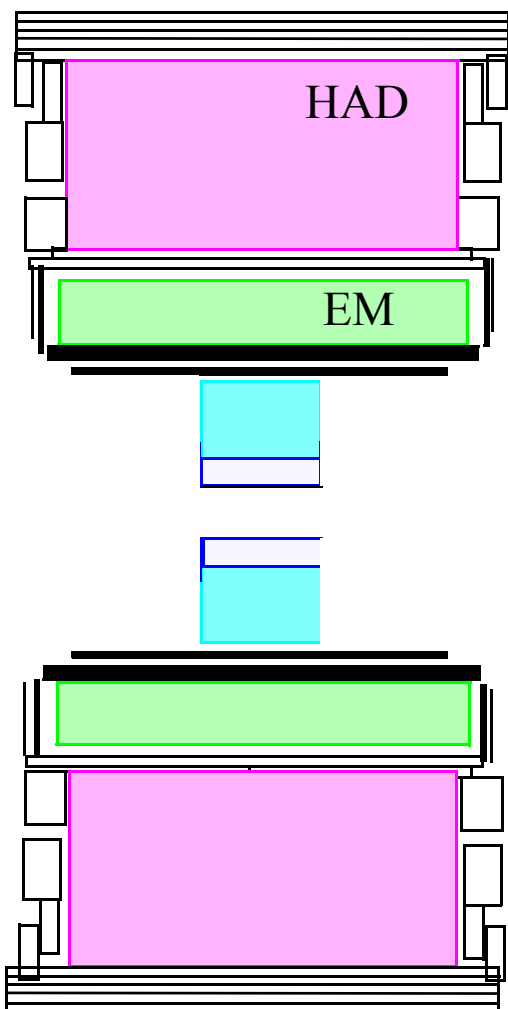
Removal of scaffolding.



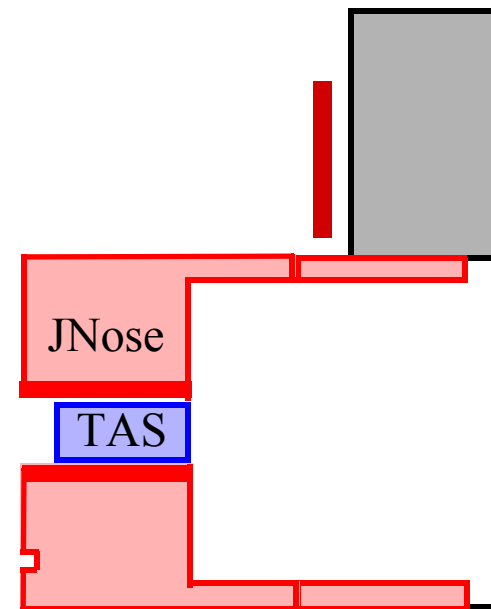


ACCESS

Rails

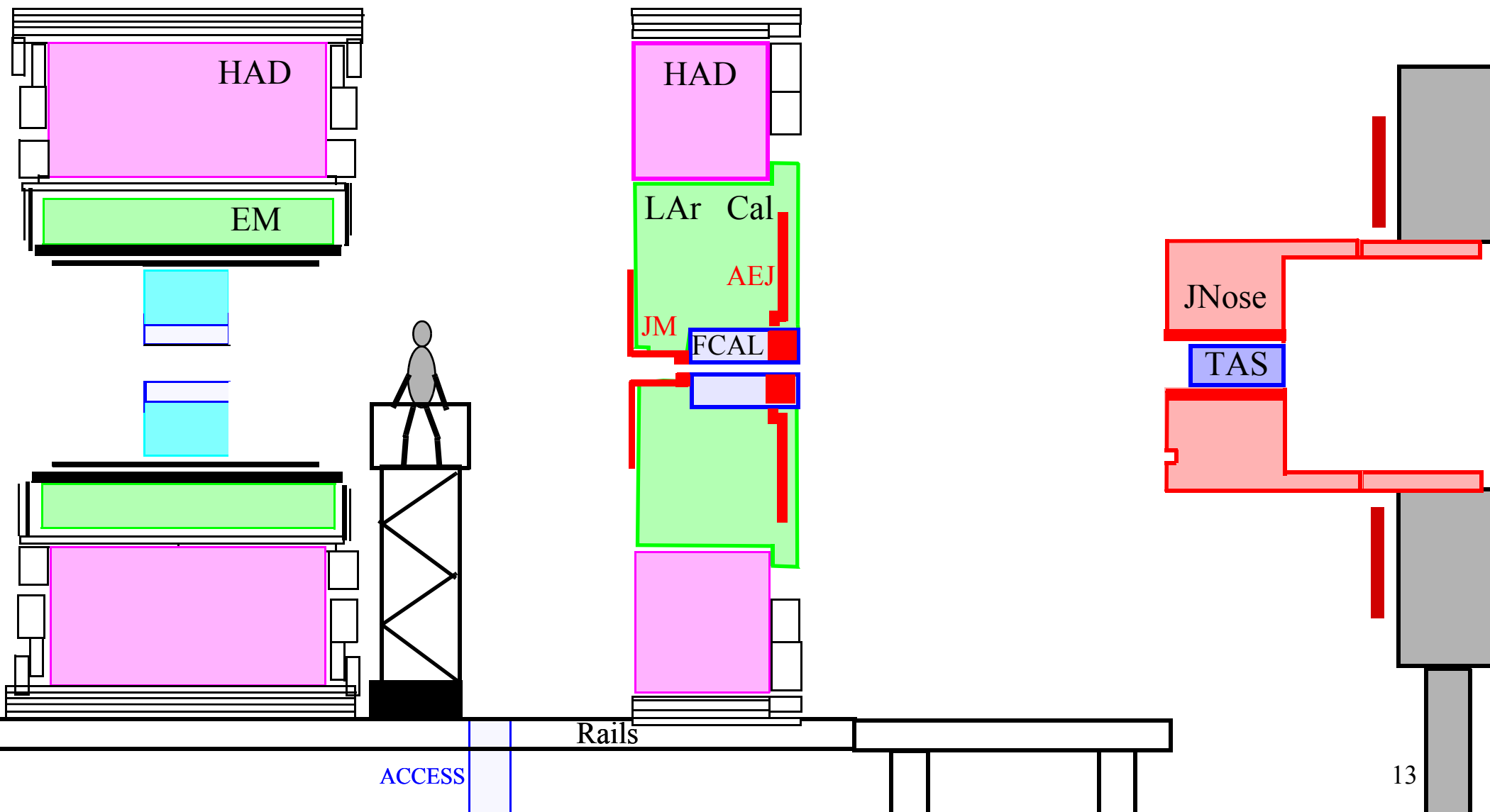


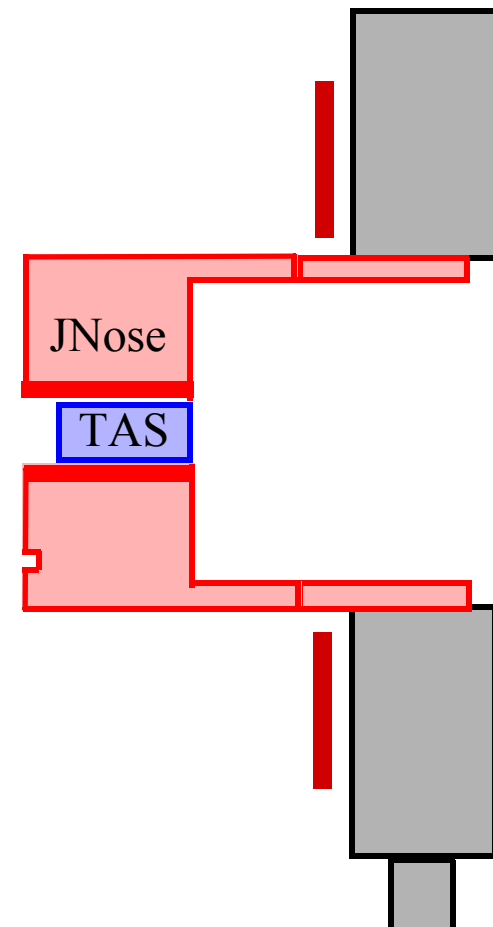
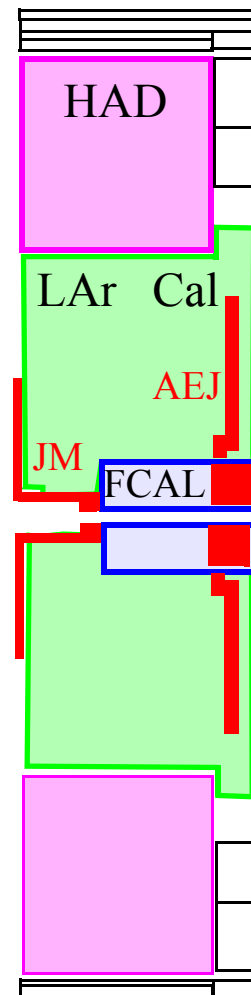
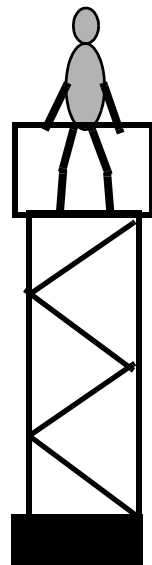
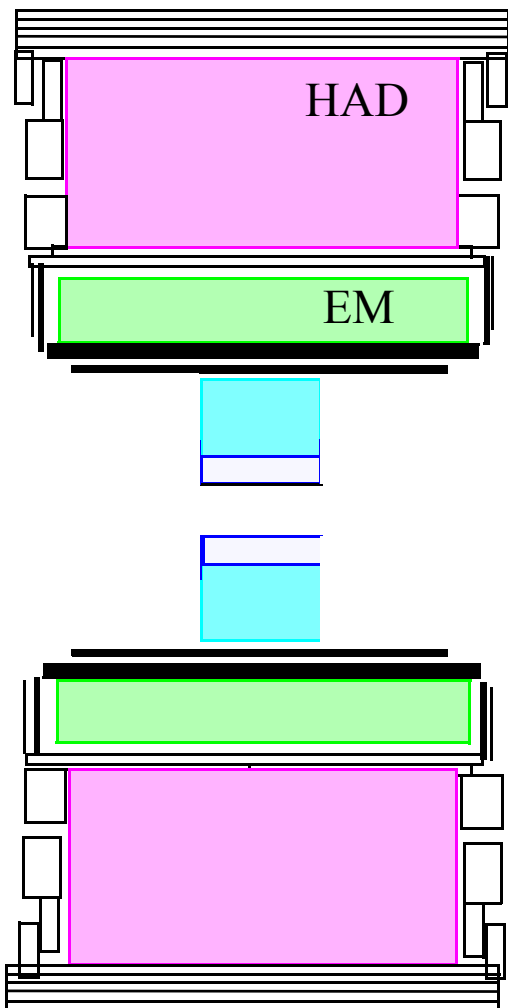
Rails



ACCESS

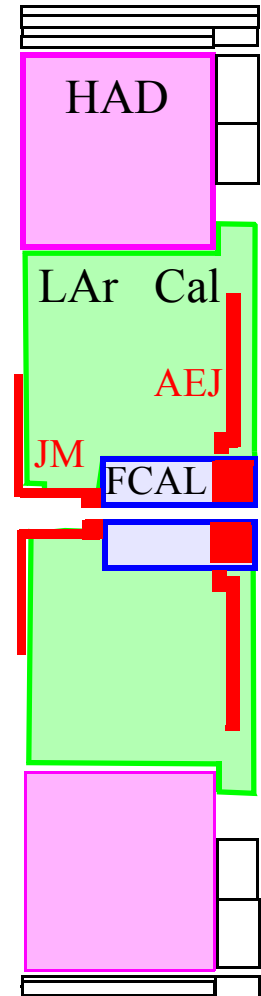
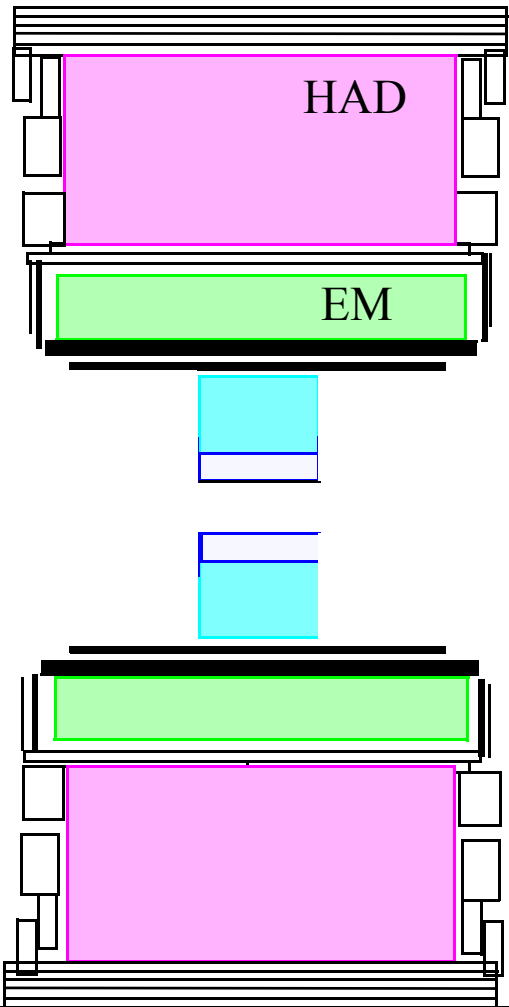
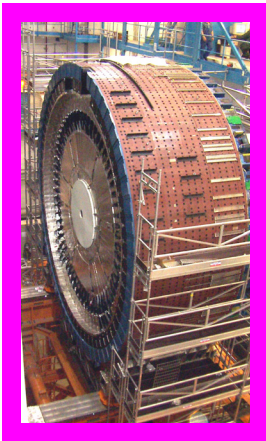
Move calorimeter.





Rails

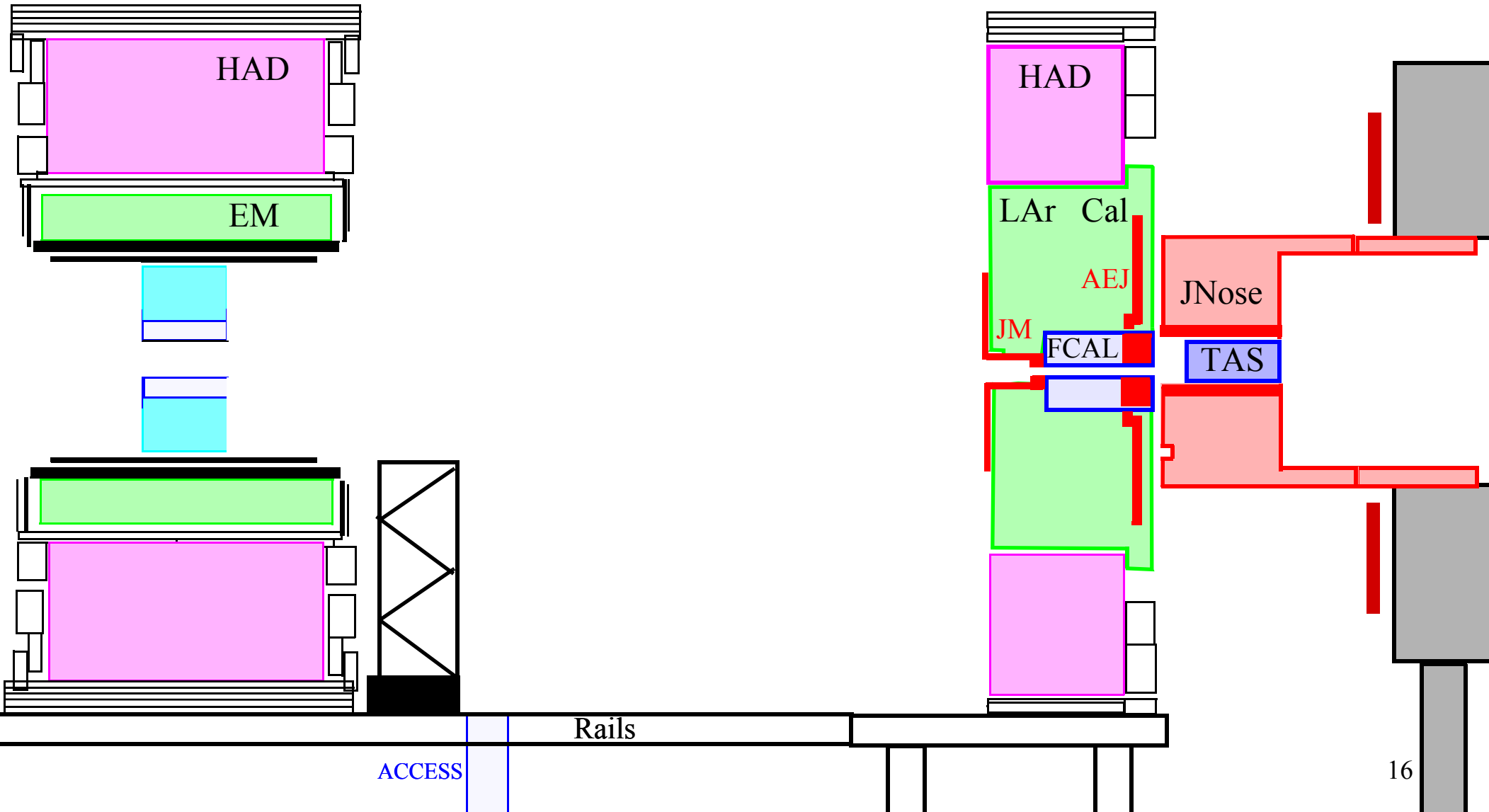
ACCESS

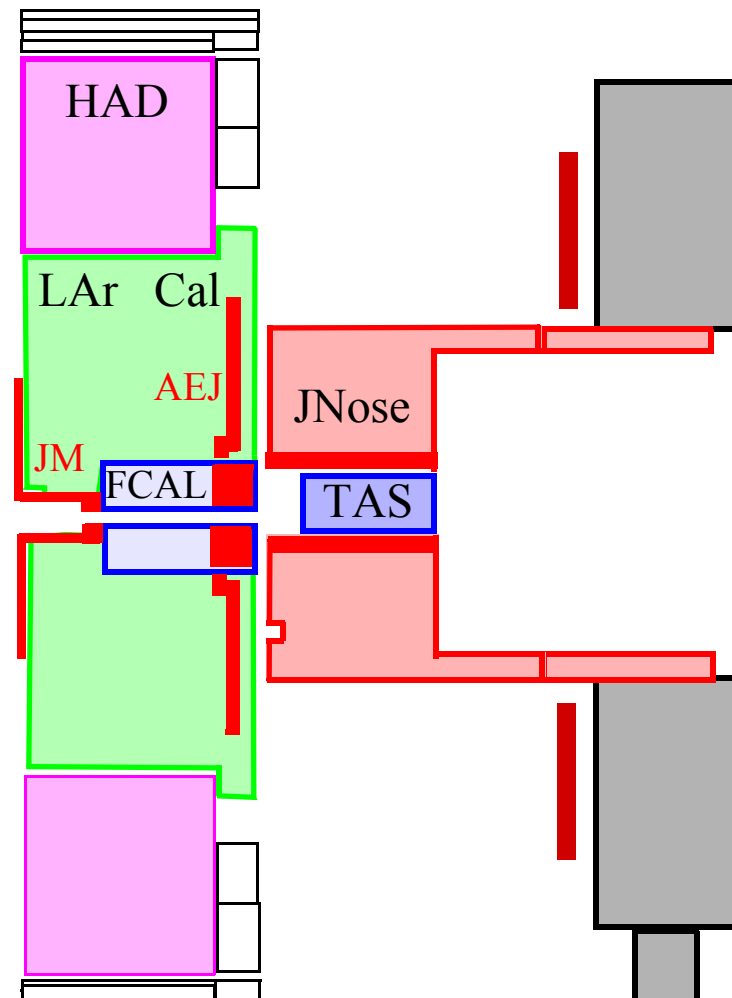
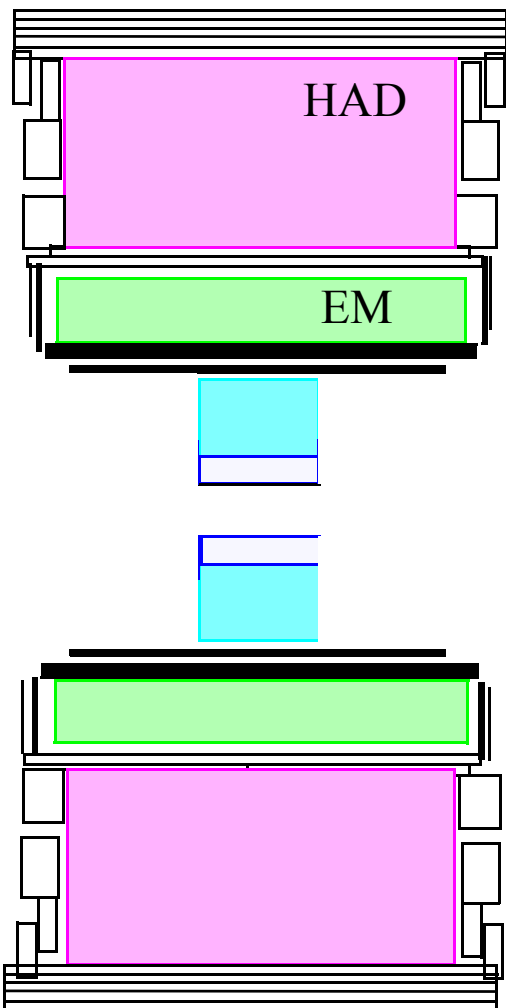


ACCESS

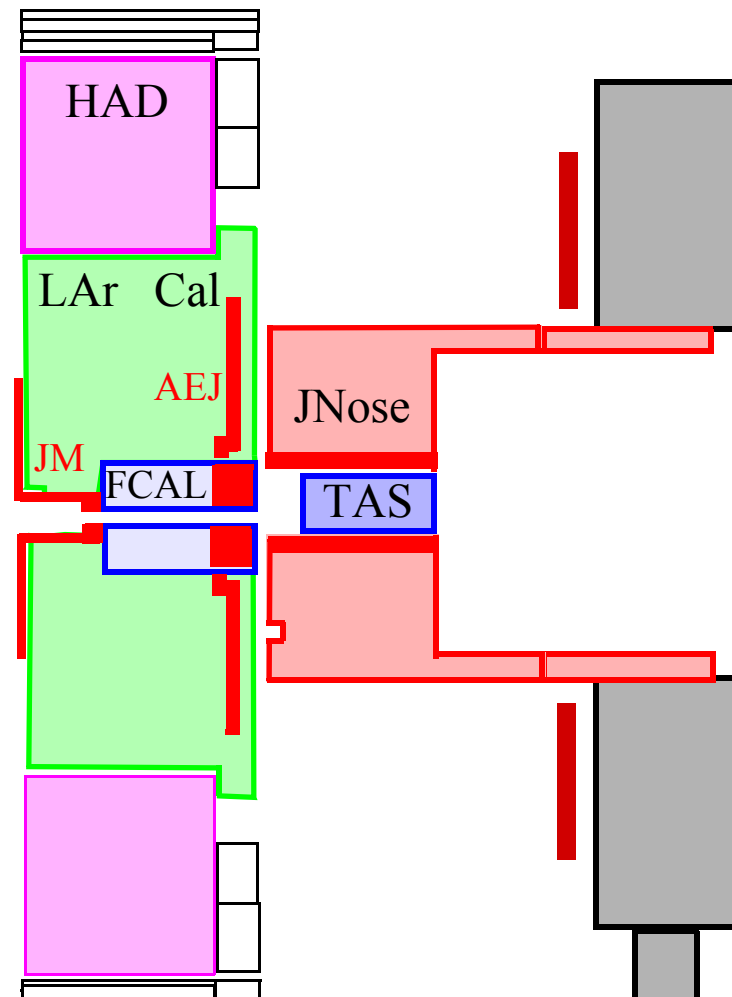
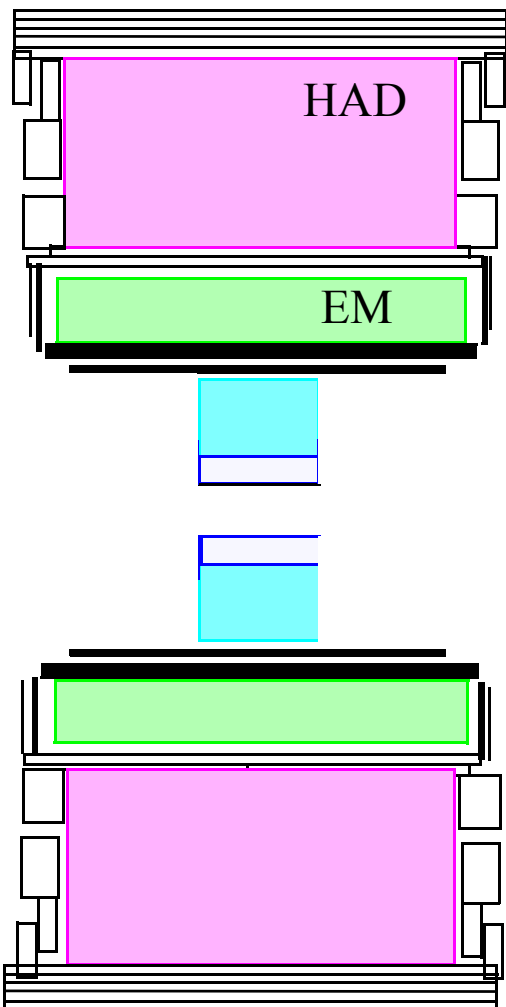
Rails

Remove scaffolding.



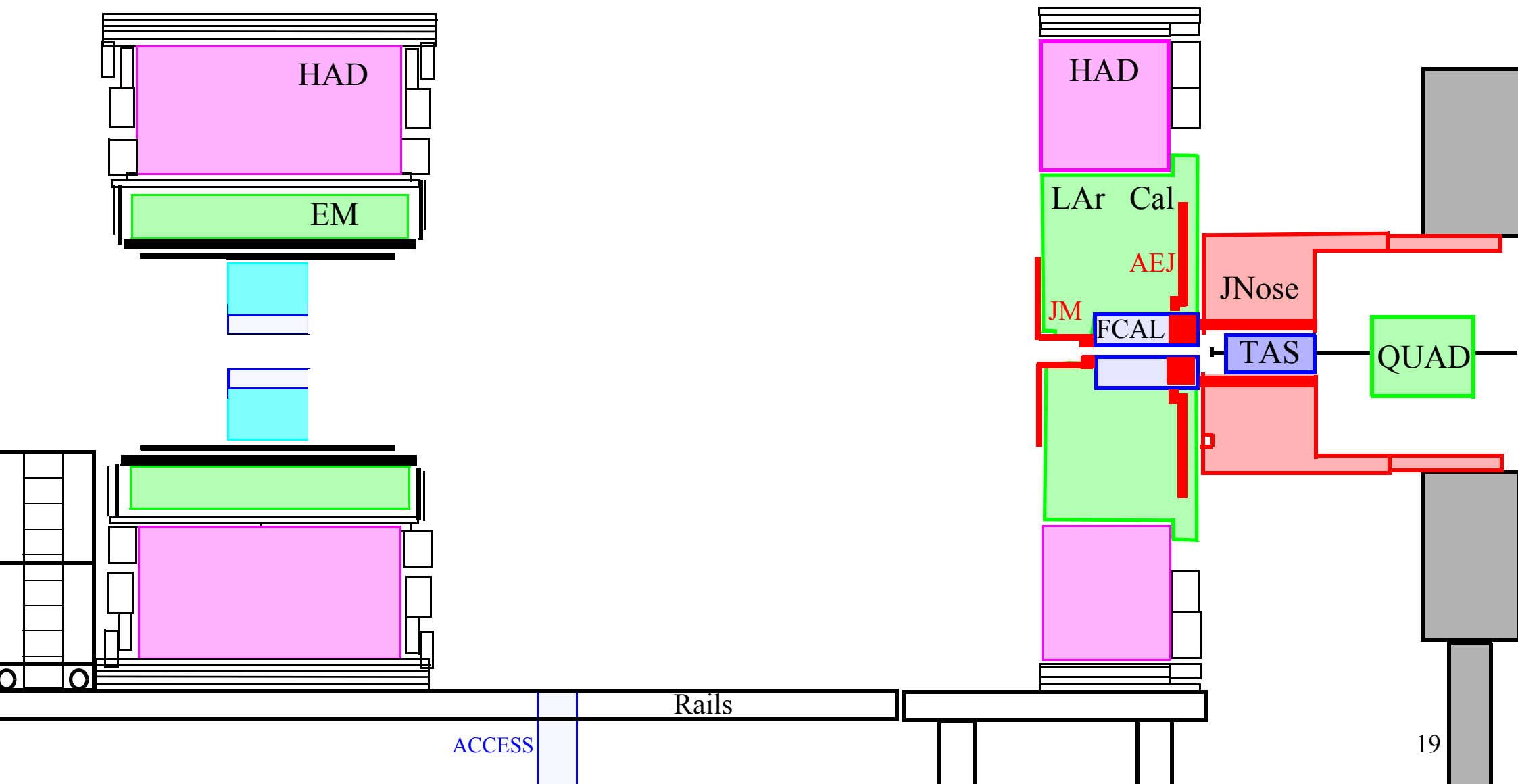


ACCESS RAILS

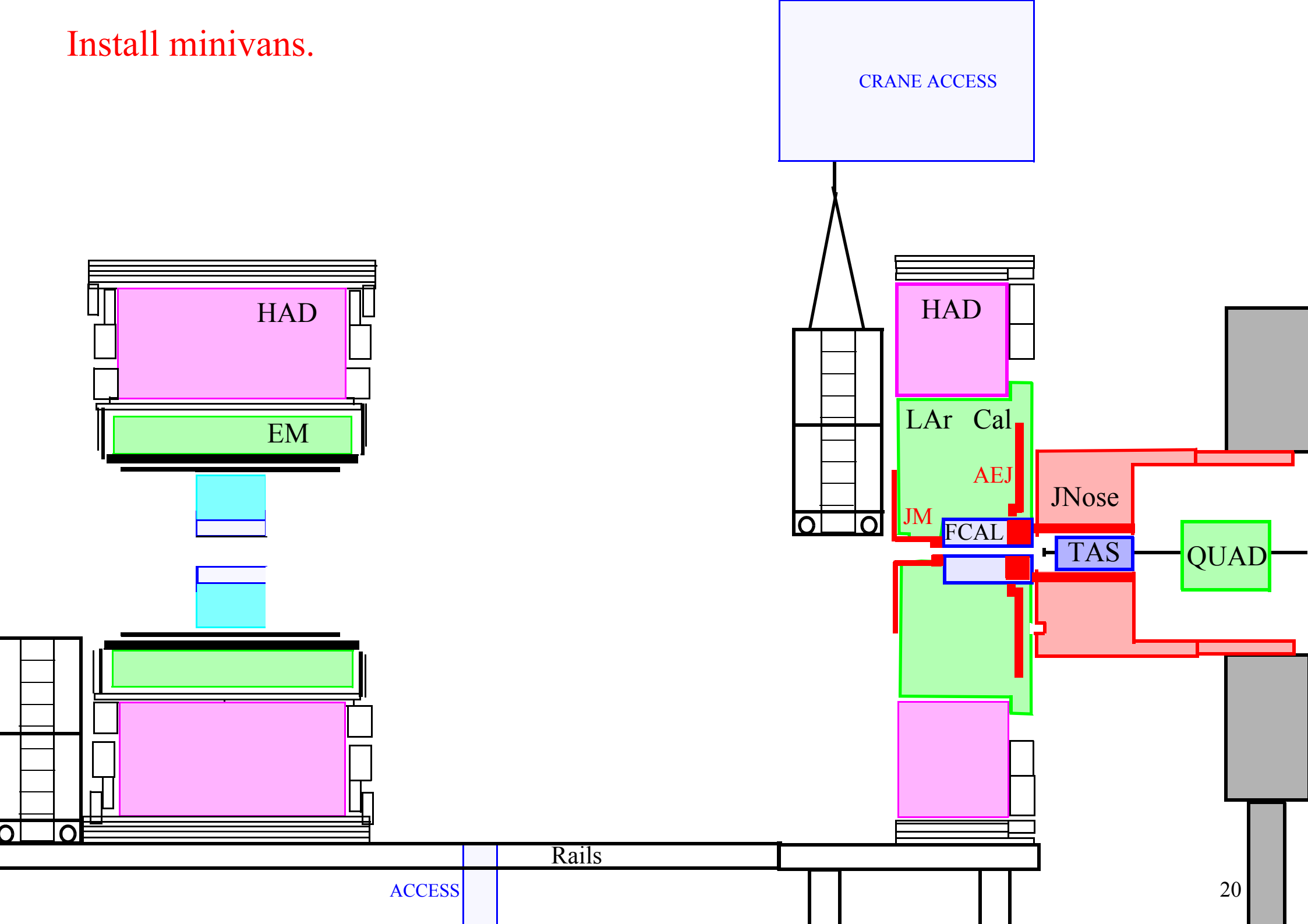


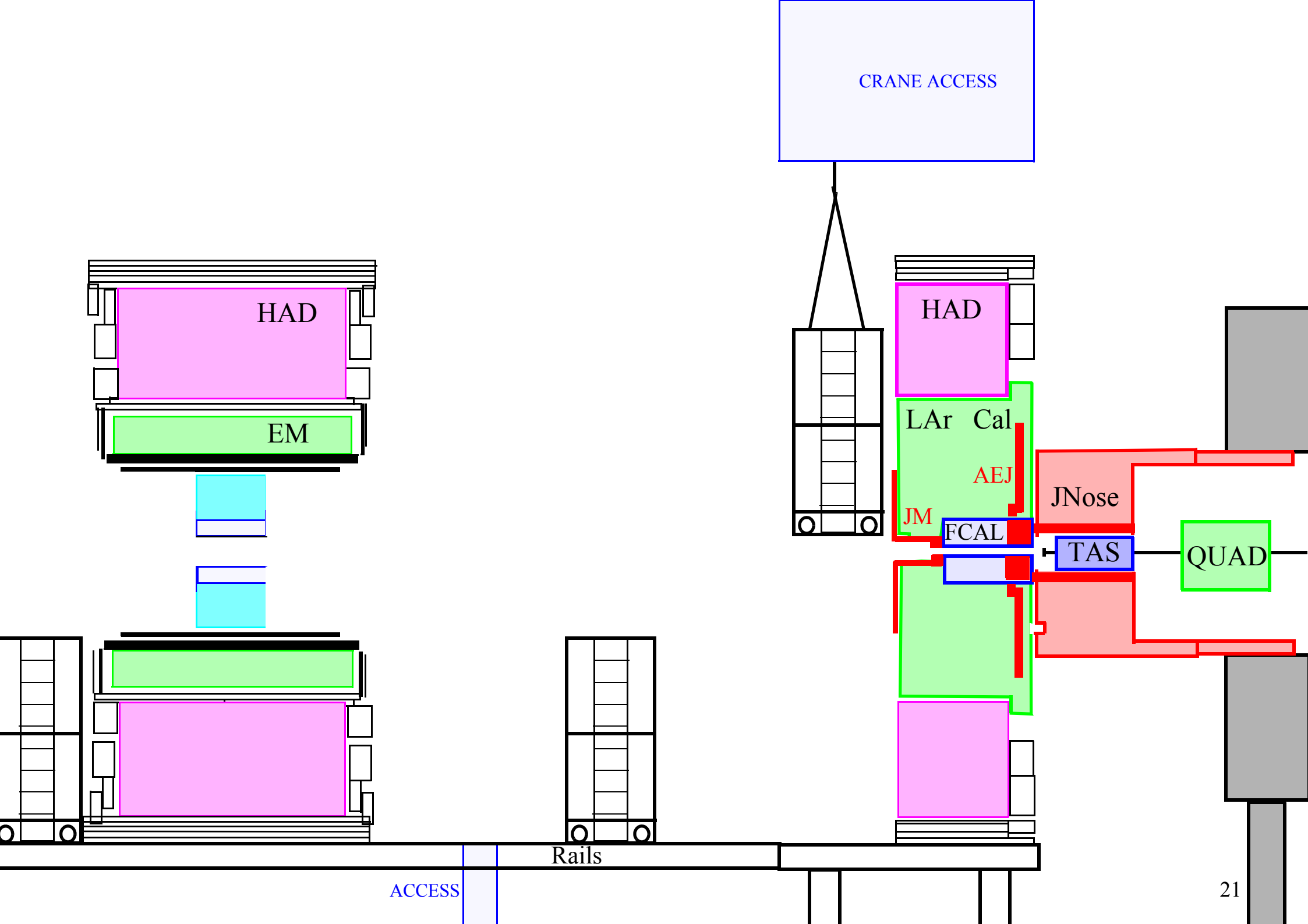
ACCESS

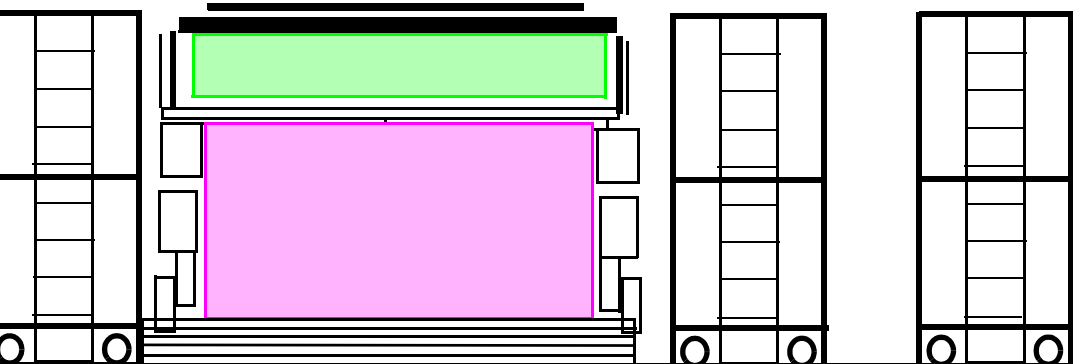
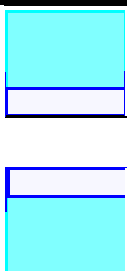
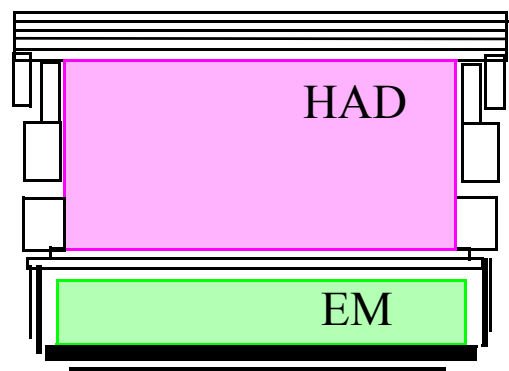
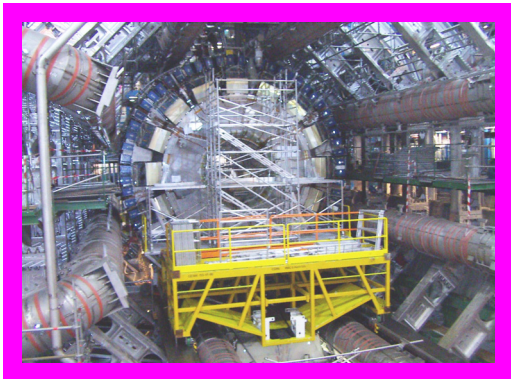
Rails



Install minivans.

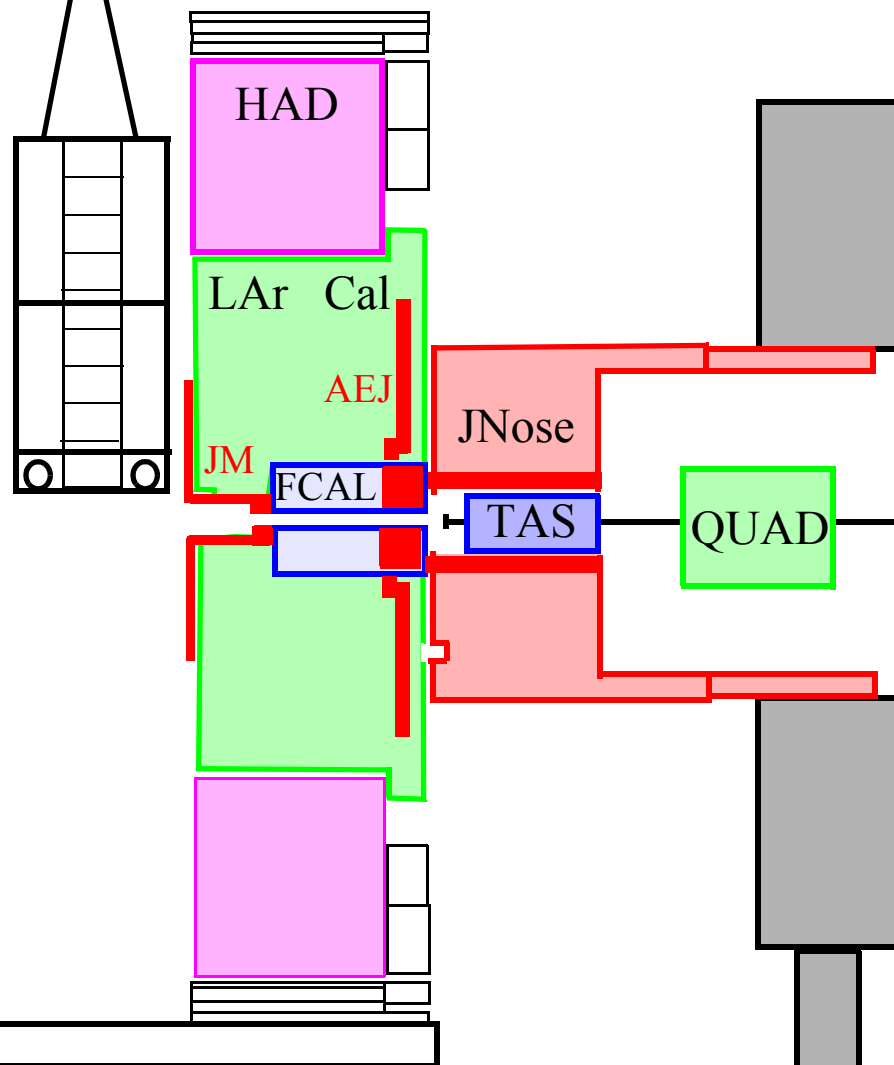


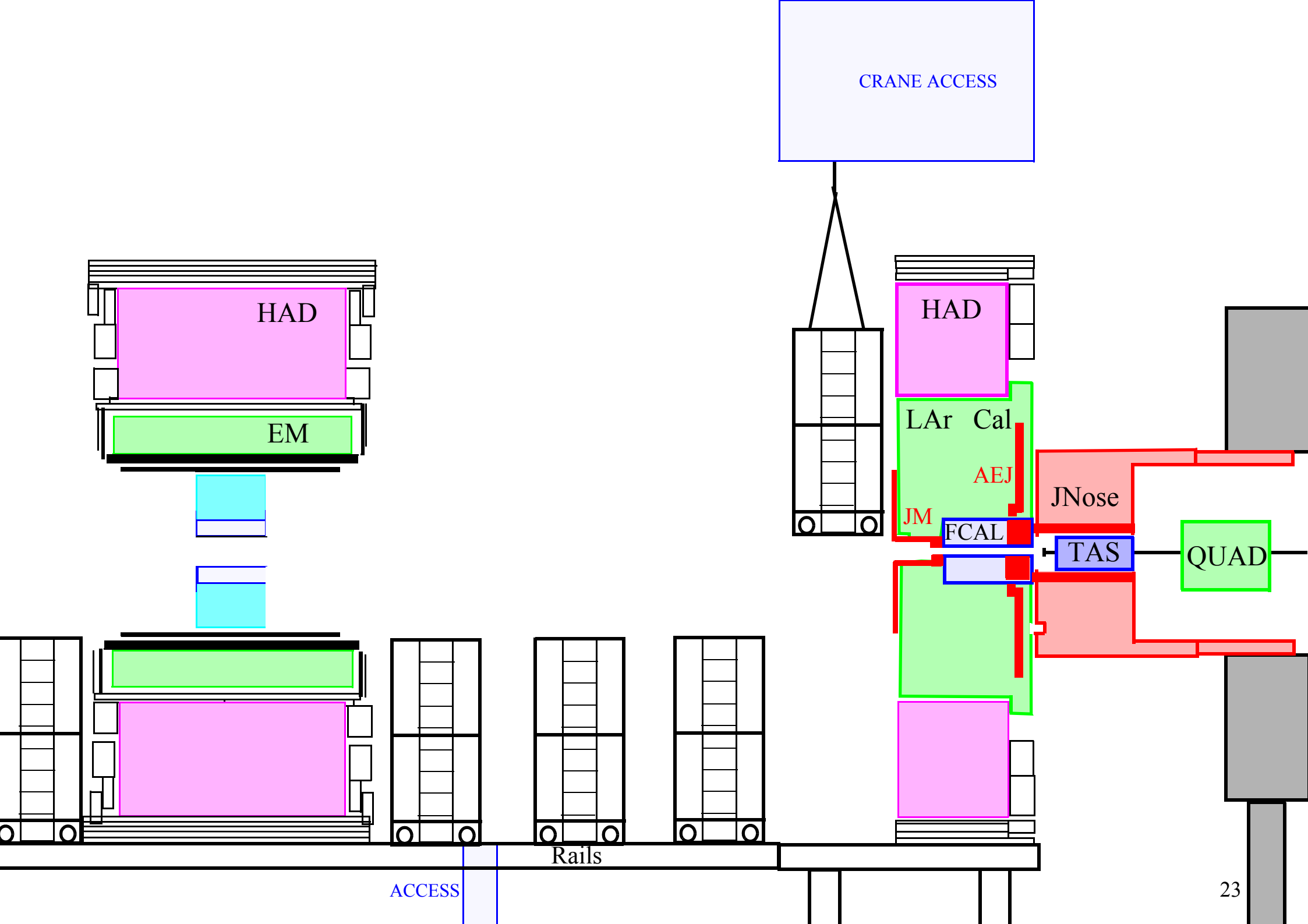




ACCESS

Rails





CRANE ACCESS

HAD

EM

HAD

LAr Cal

AEJ

JM

FCAL

JNose

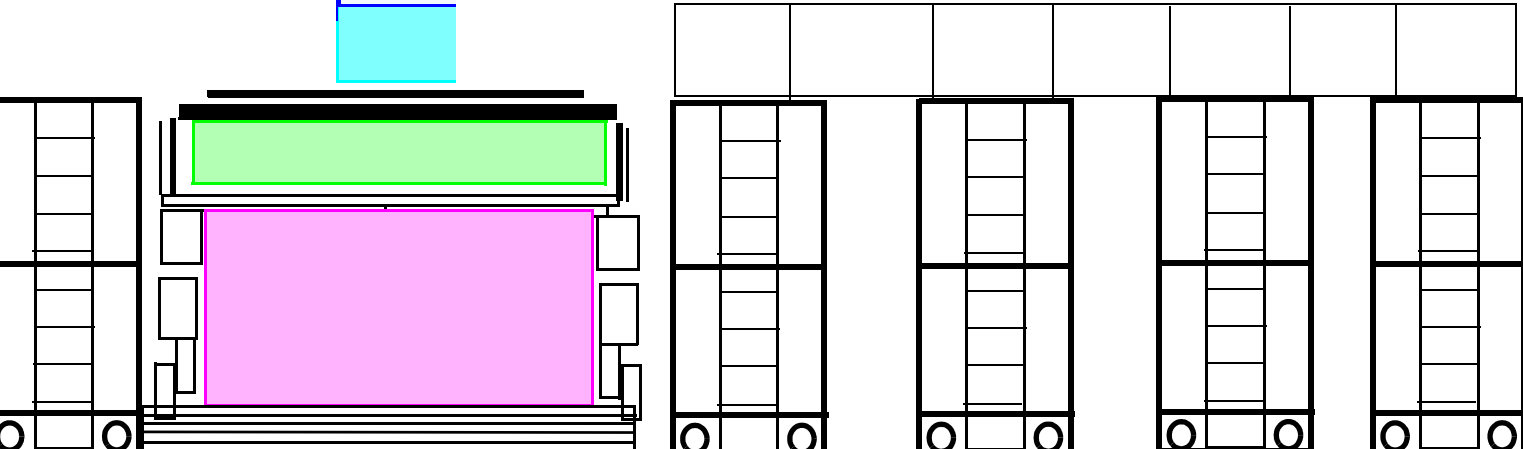
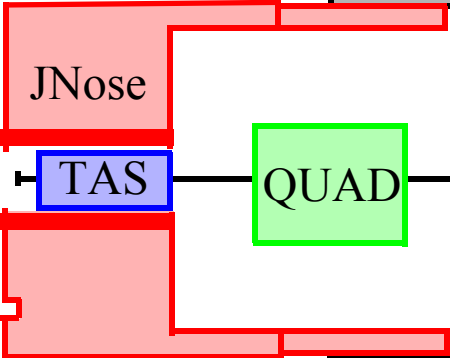
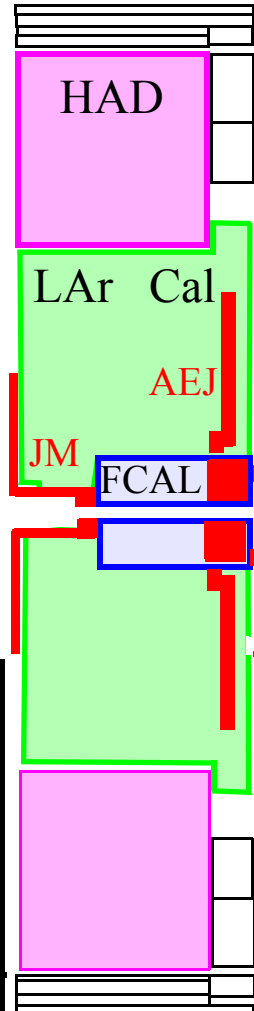
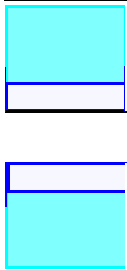
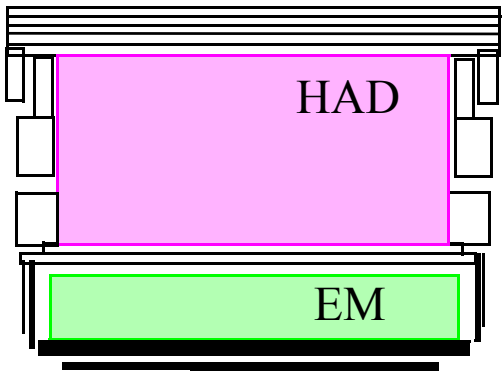
TAS

QUAD

Rails

ACCESS

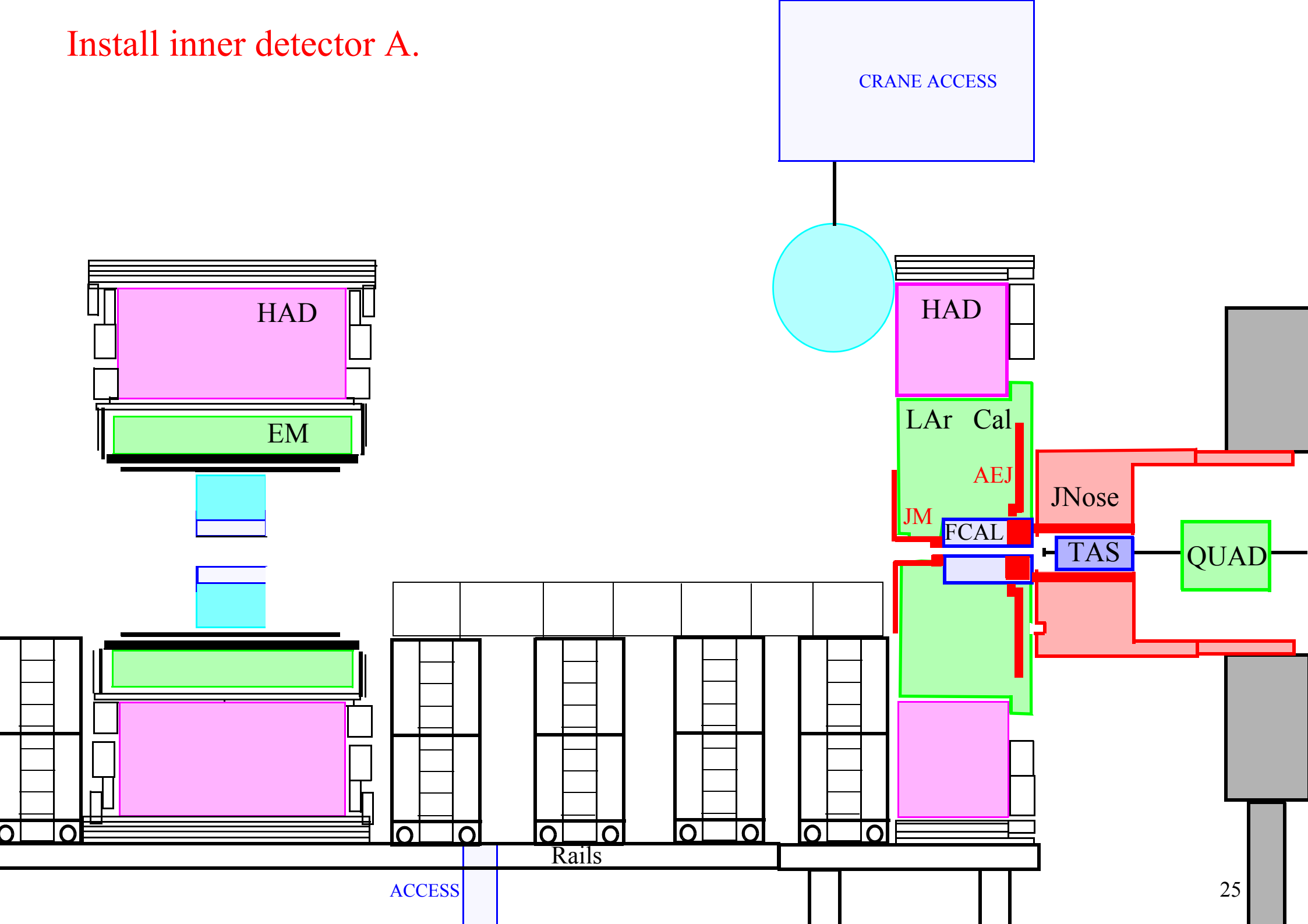
CRANE ACCESS

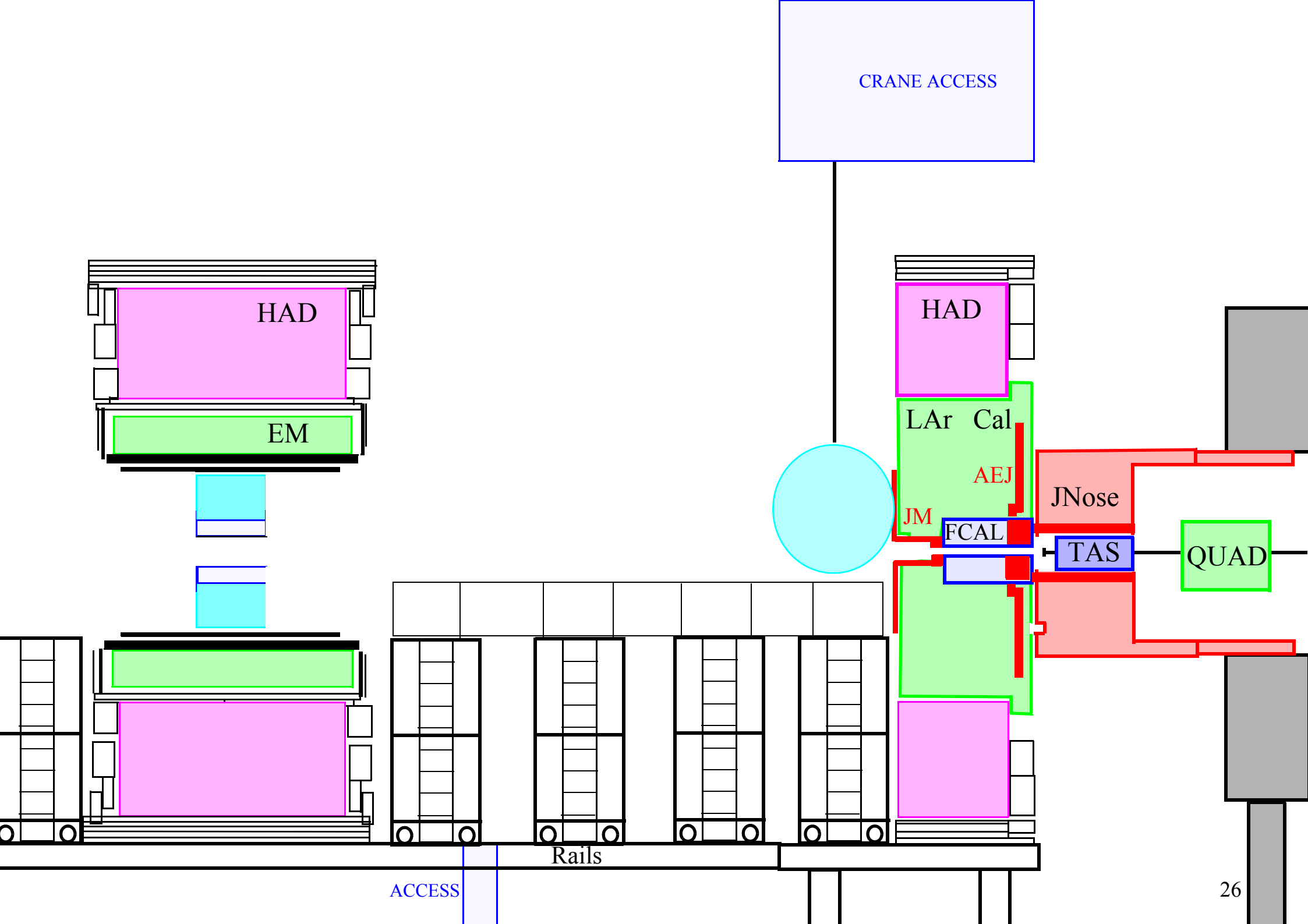


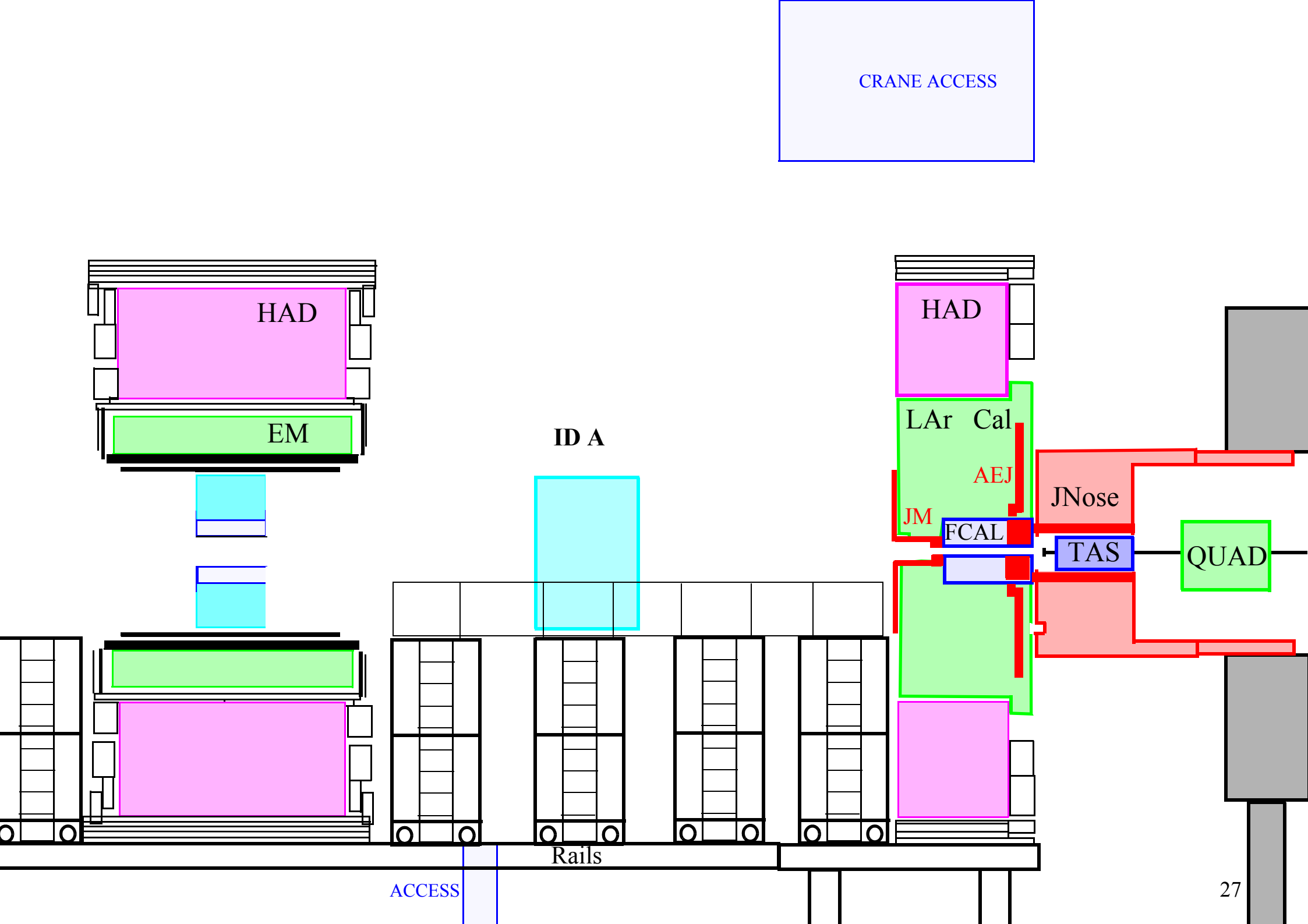
ACCESS

Rails

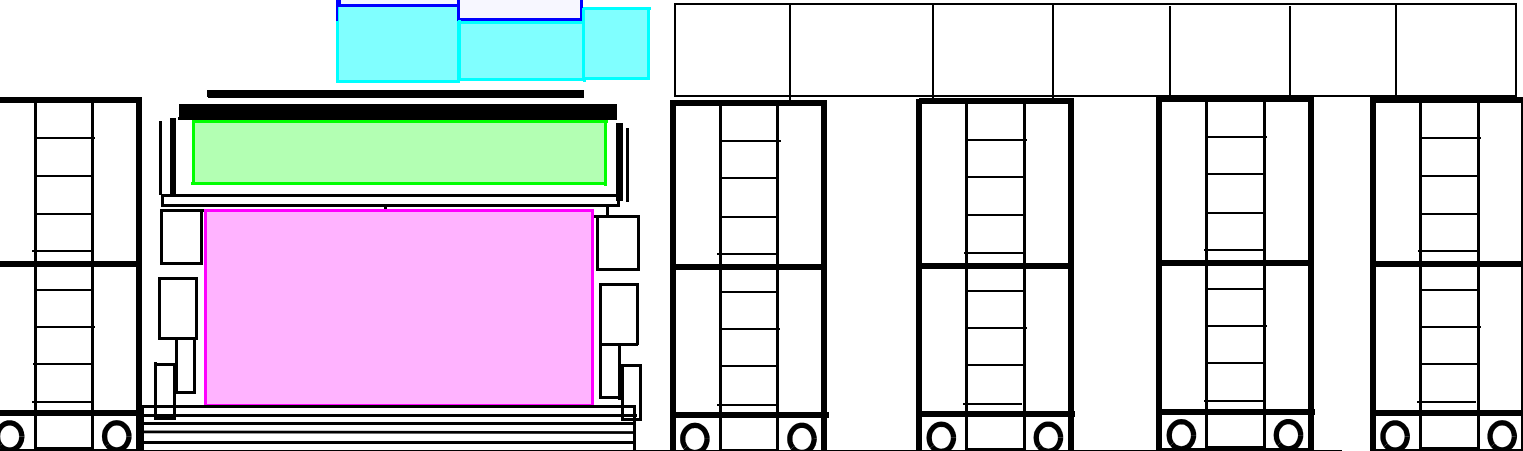
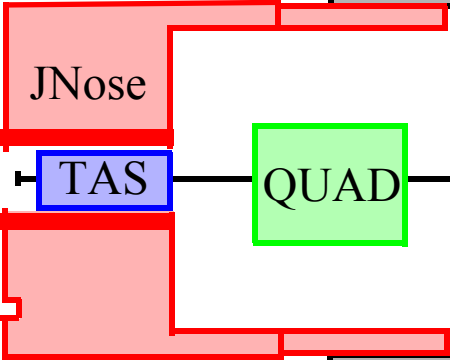
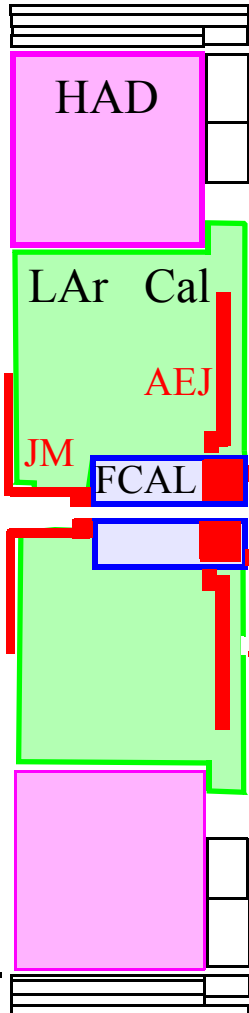
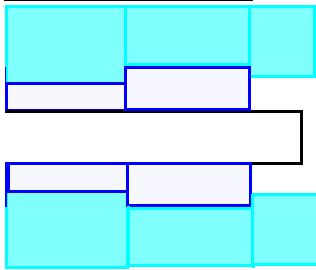
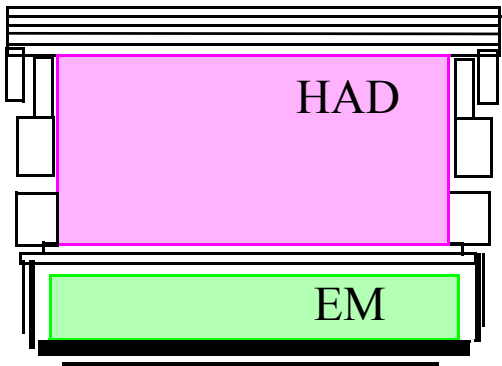
Install inner detector A.







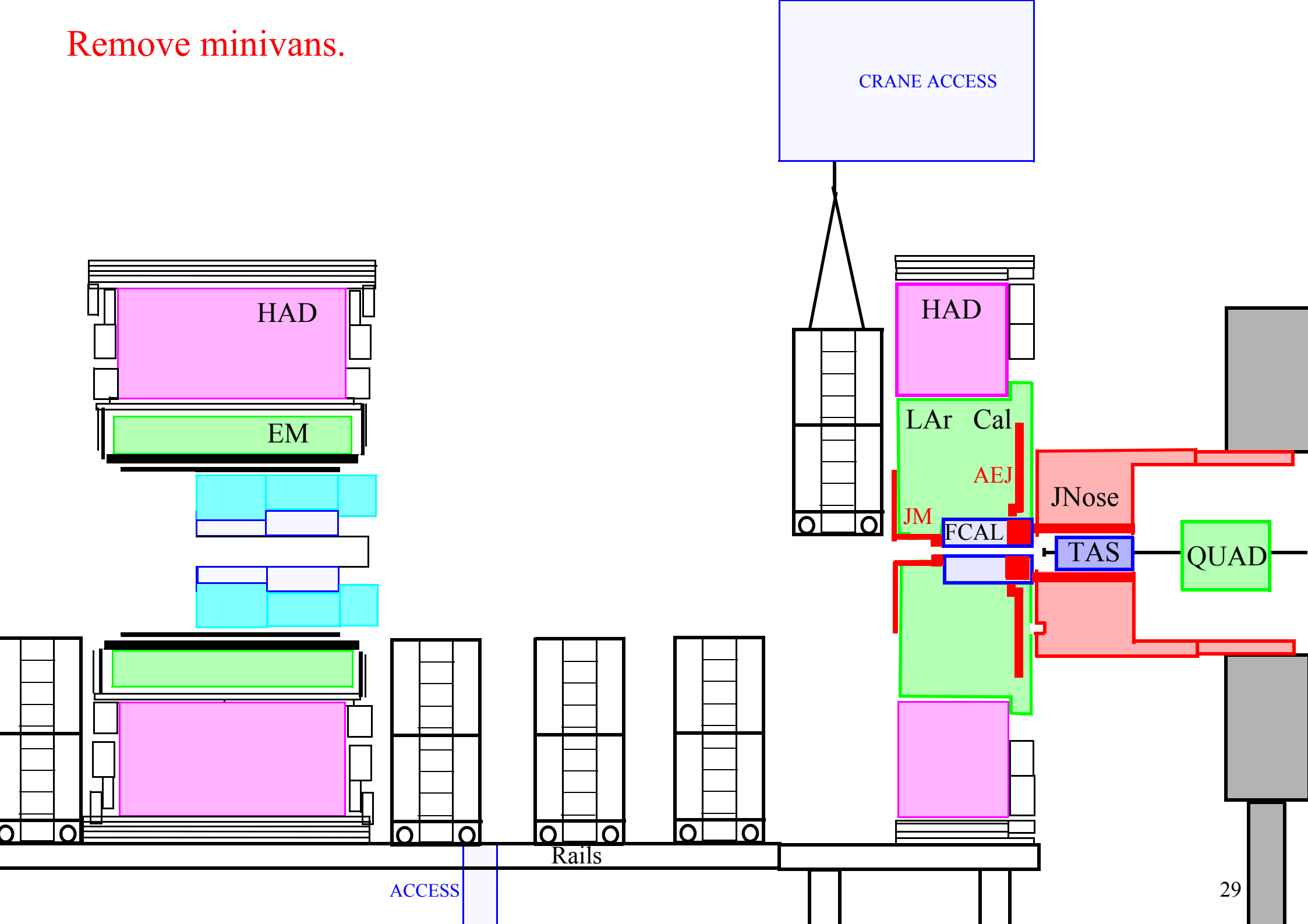
CRANE ACCESS

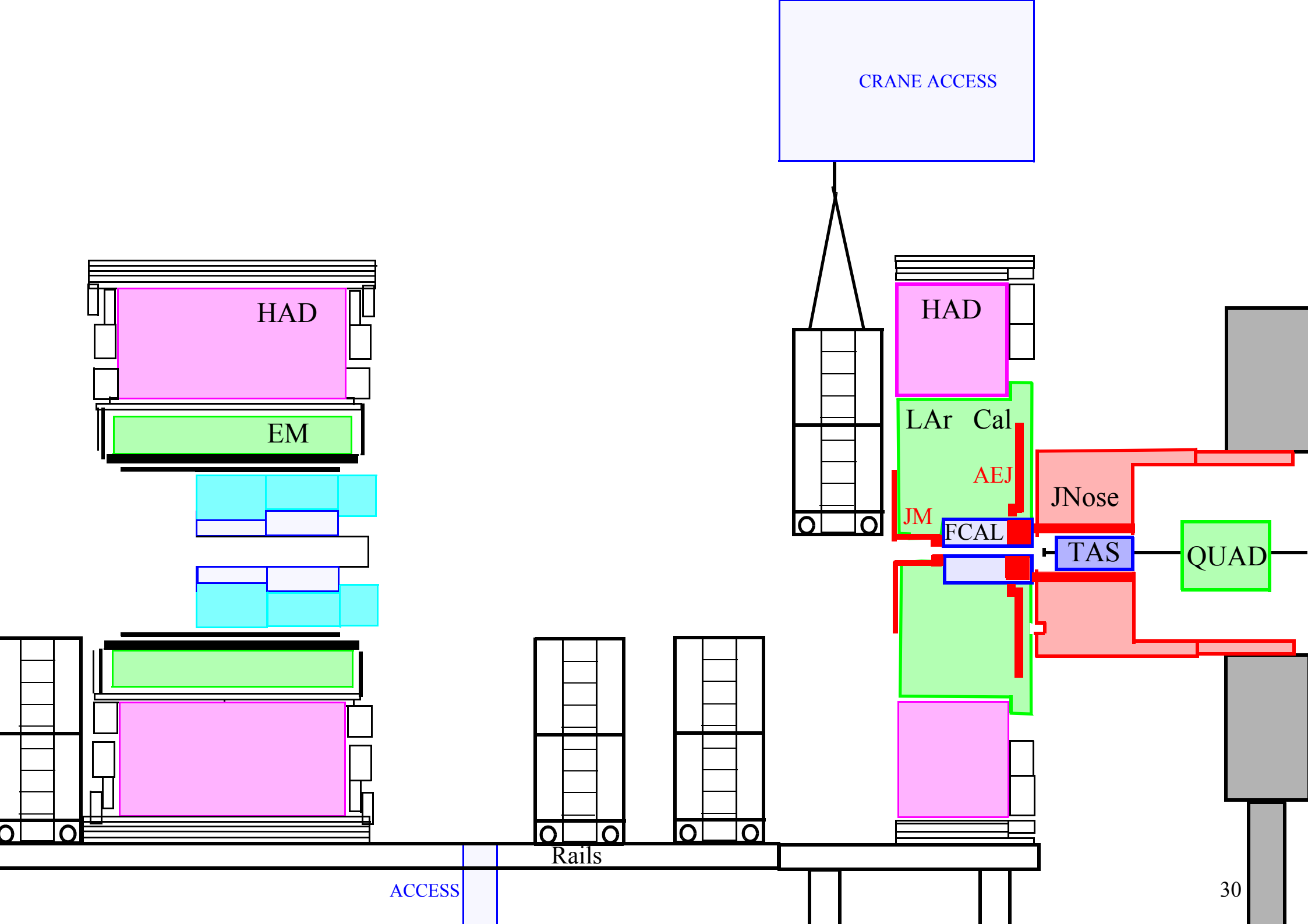


ACCESS

RAILS

Remove minivans.





CRANE ACCESS

HAD

EM

HAD

LAr Cal

AEJ

JM

FCAL

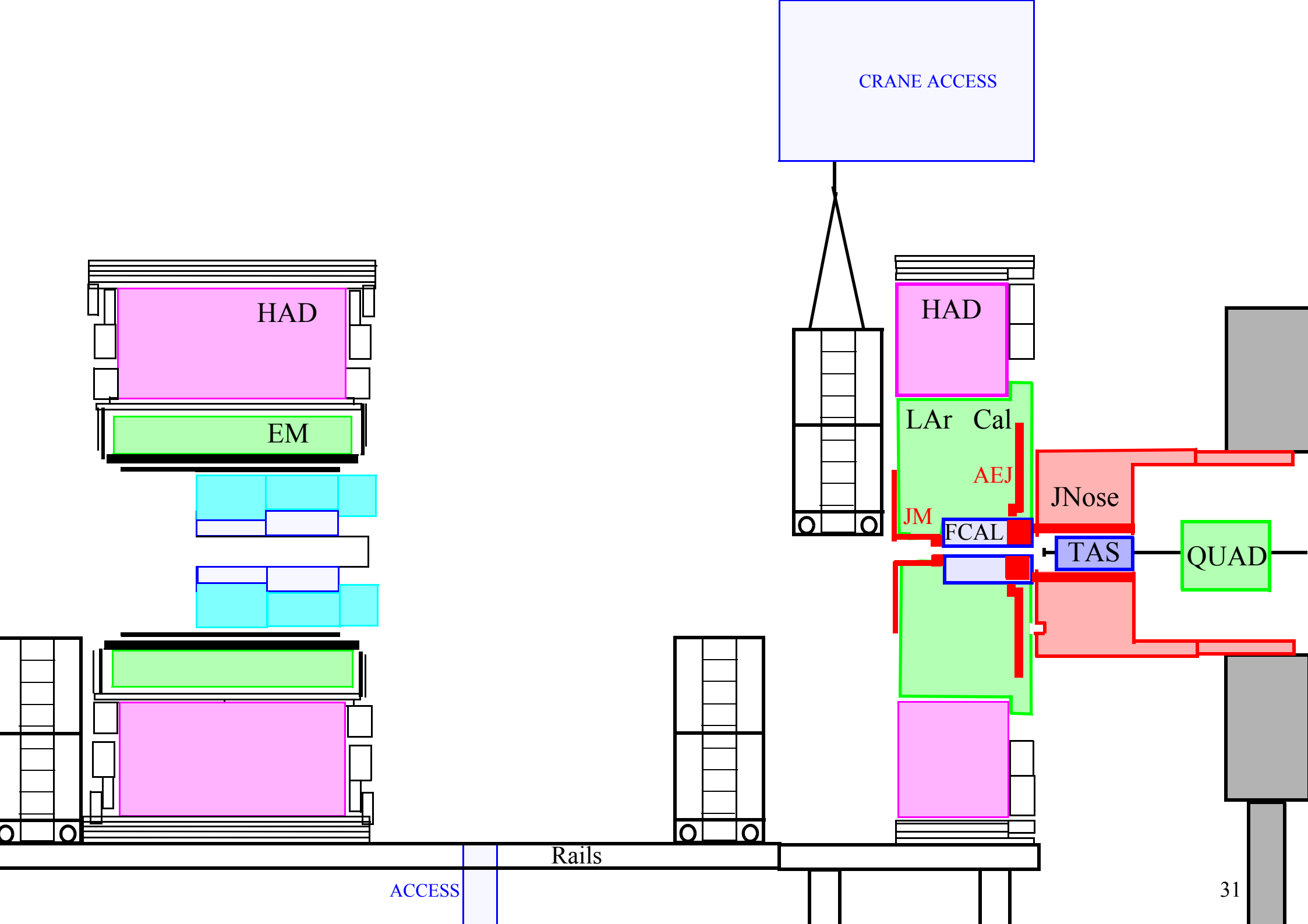
JNose

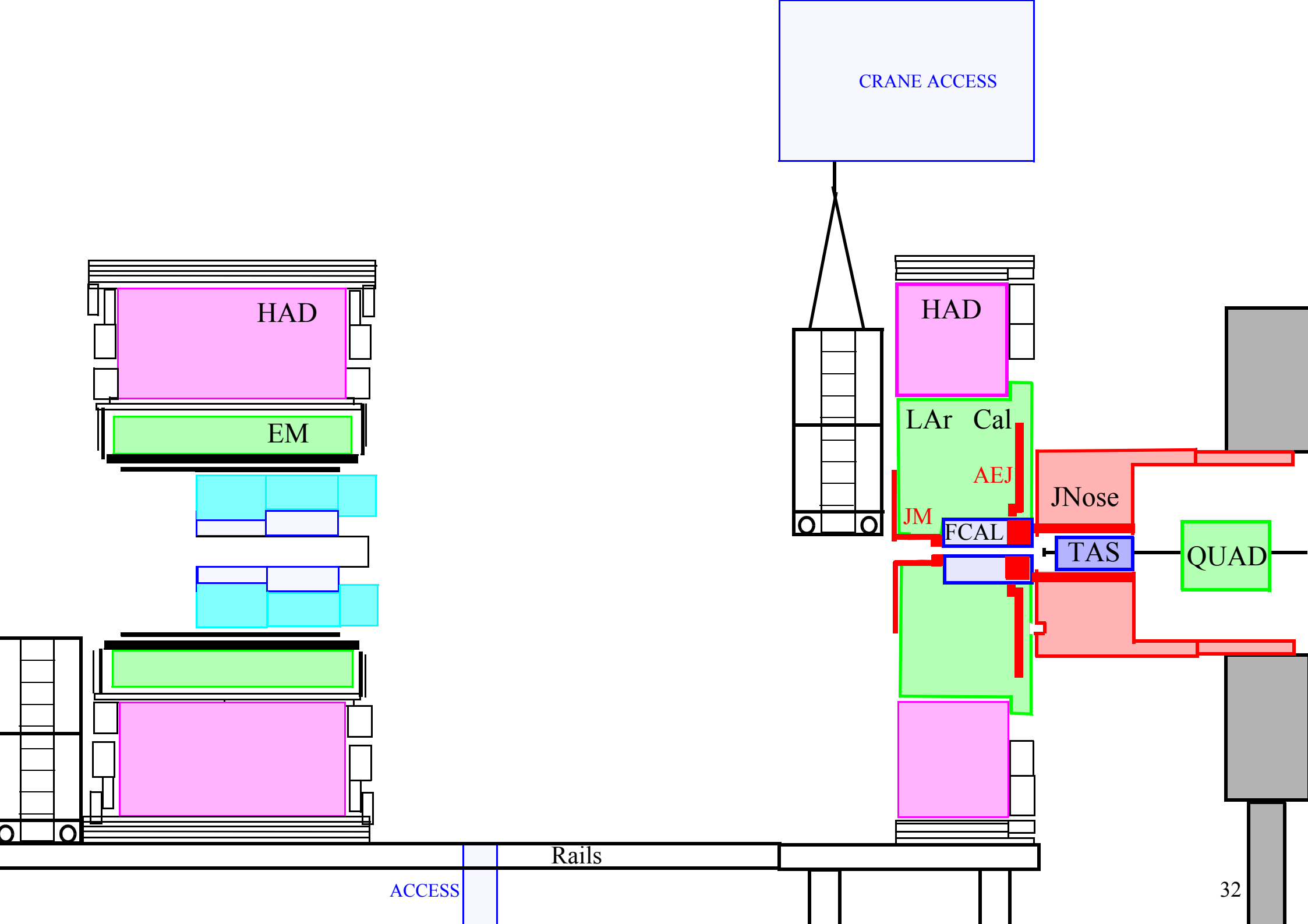
TAS

QUAD

Rails

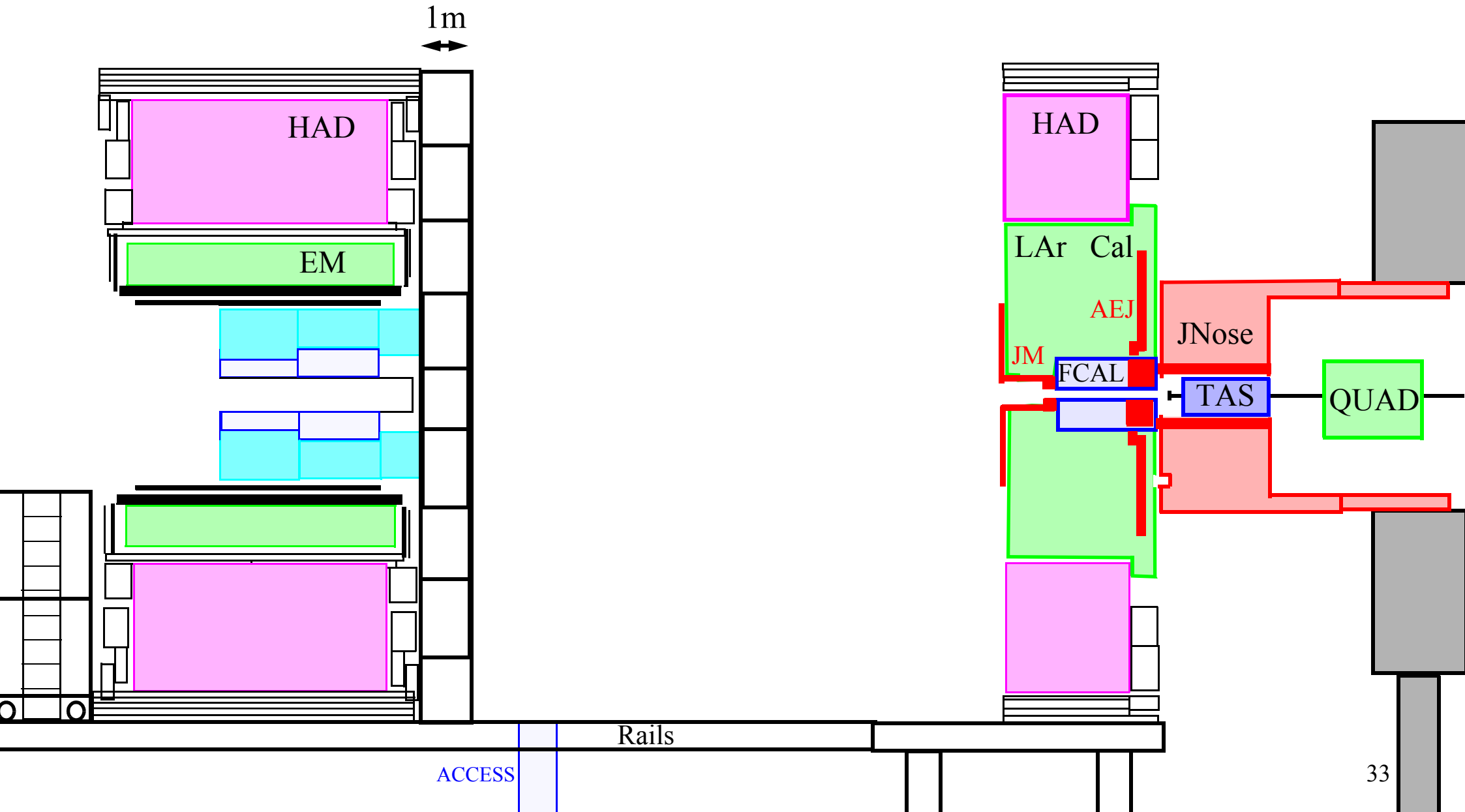
ACCESS



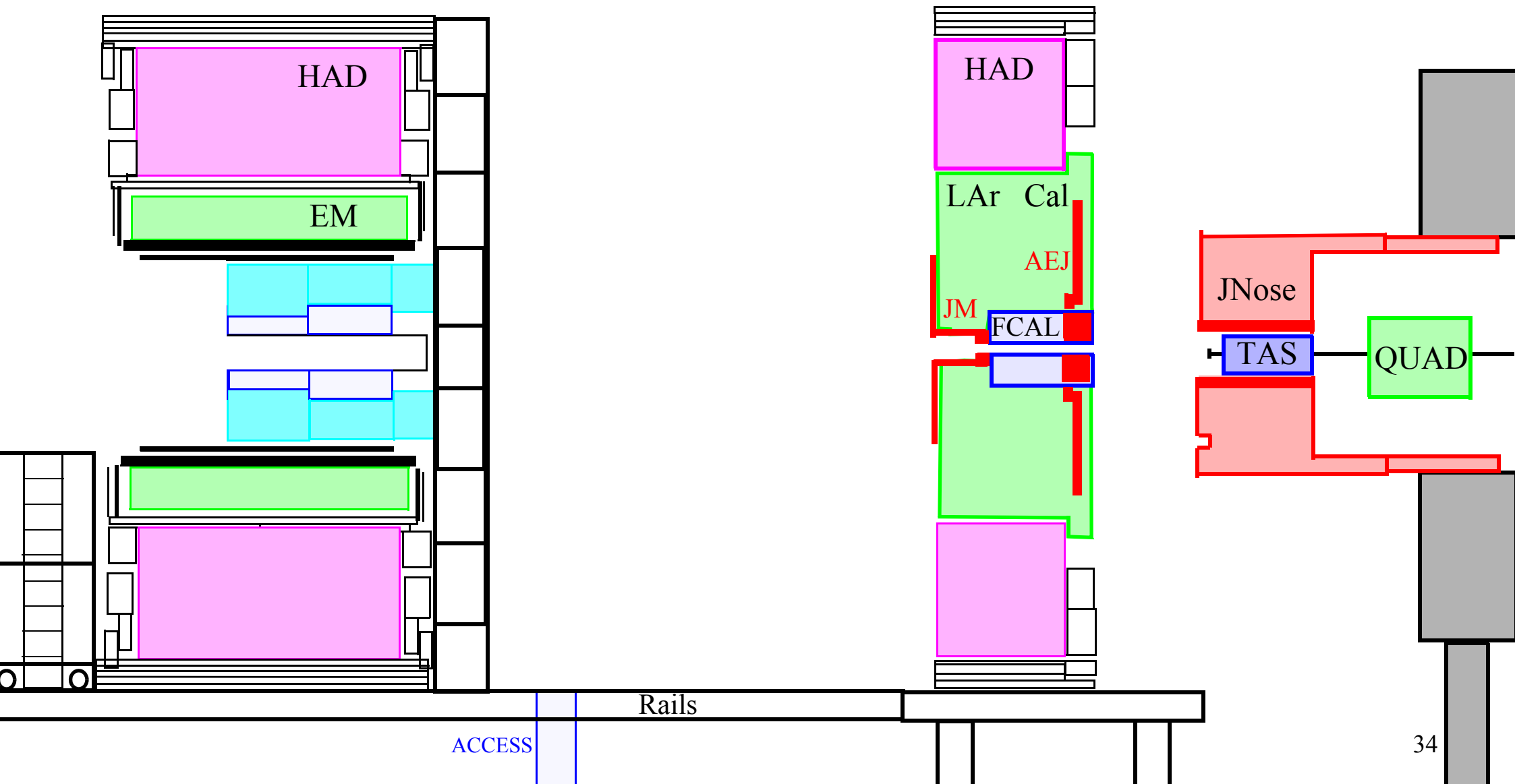


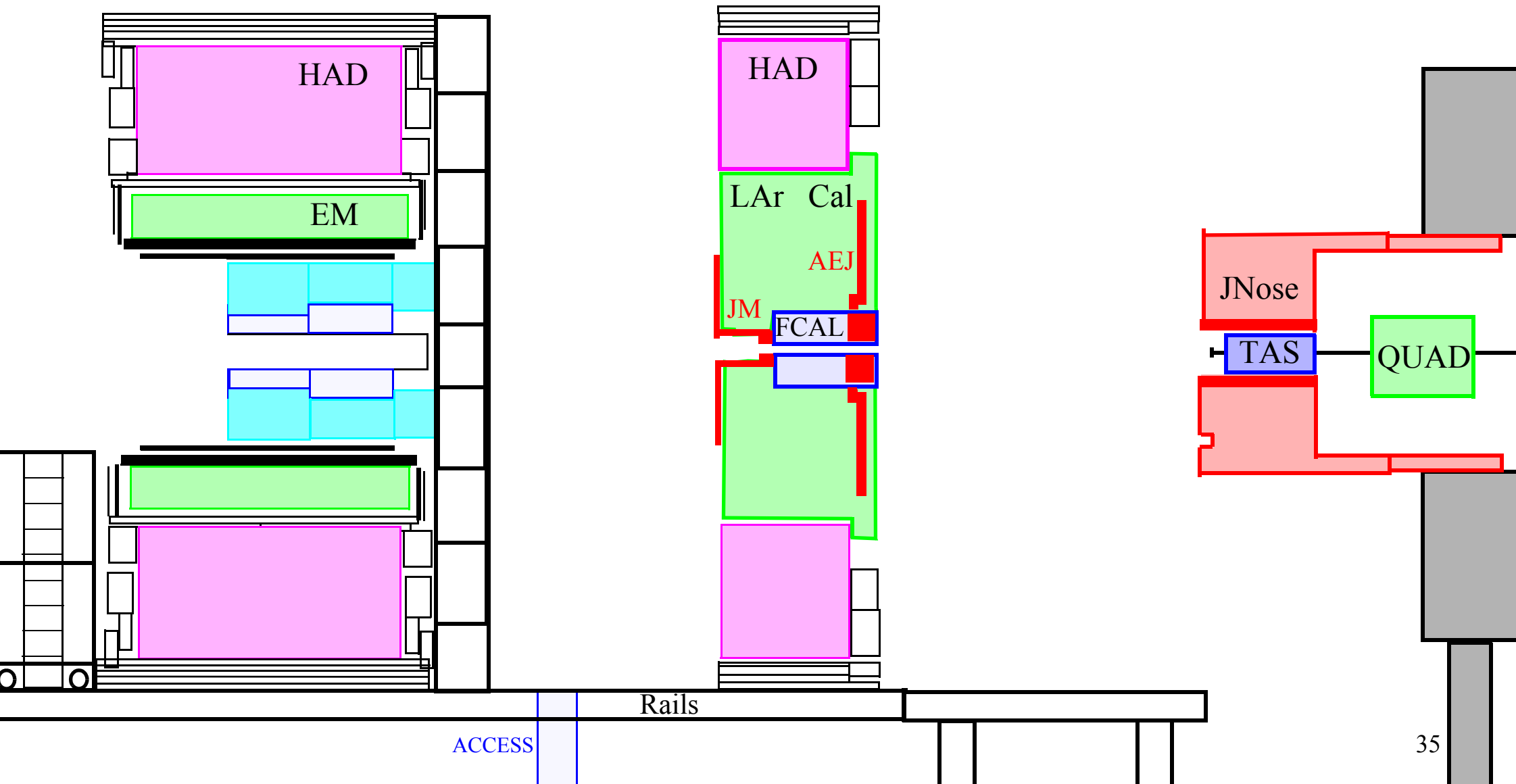
Install scaffolding.

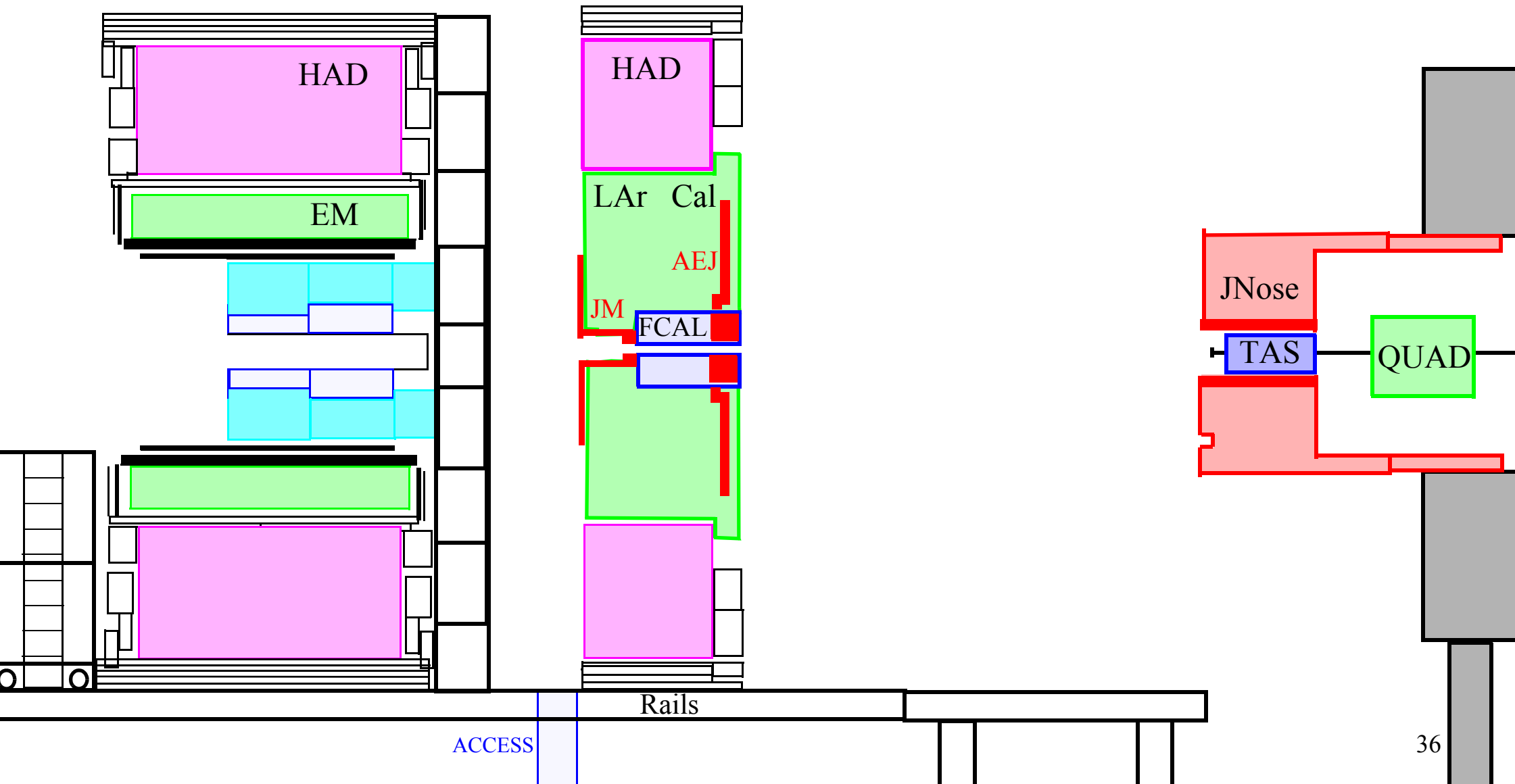
Scaffolding that is max 1.1 m
with access through muon detector.

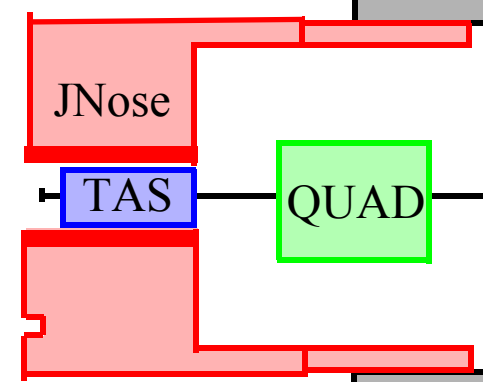
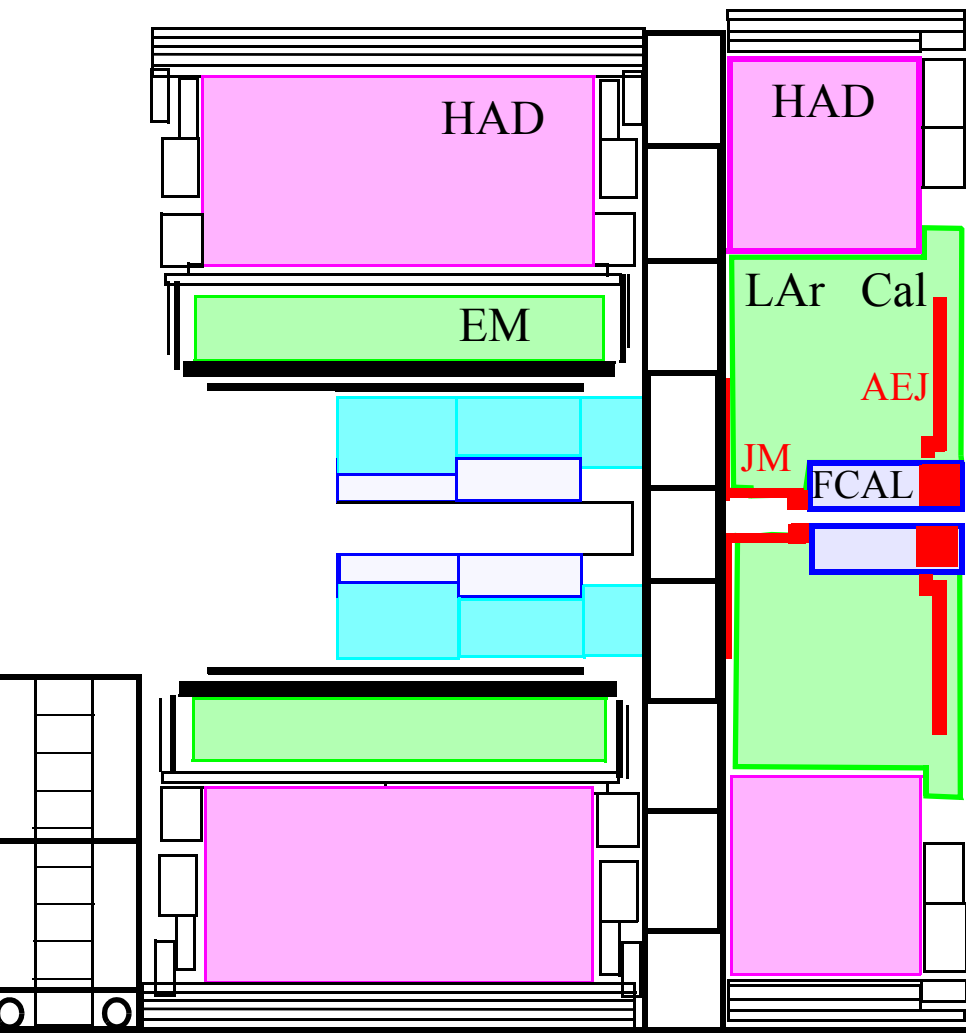


Move calorimeter.



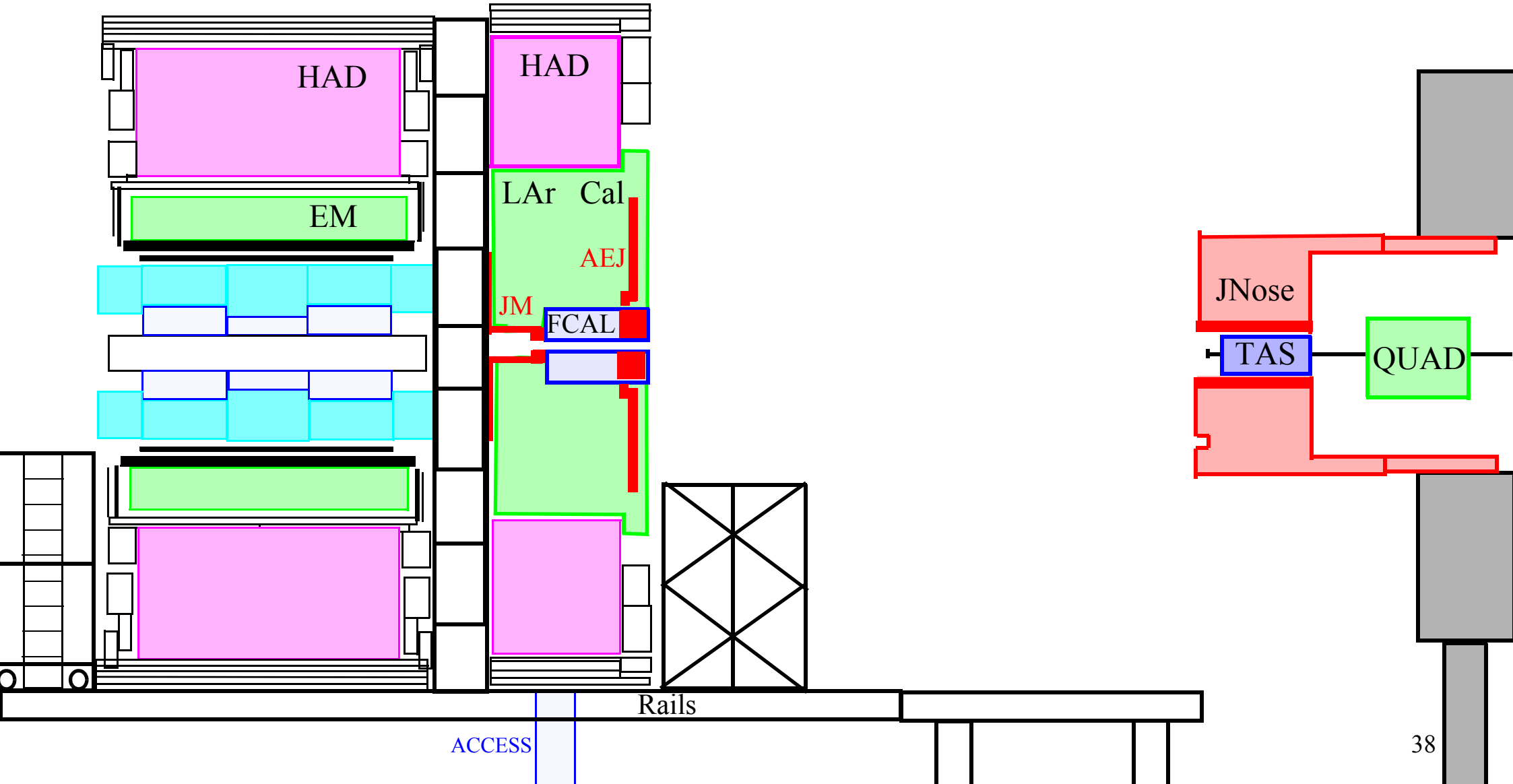


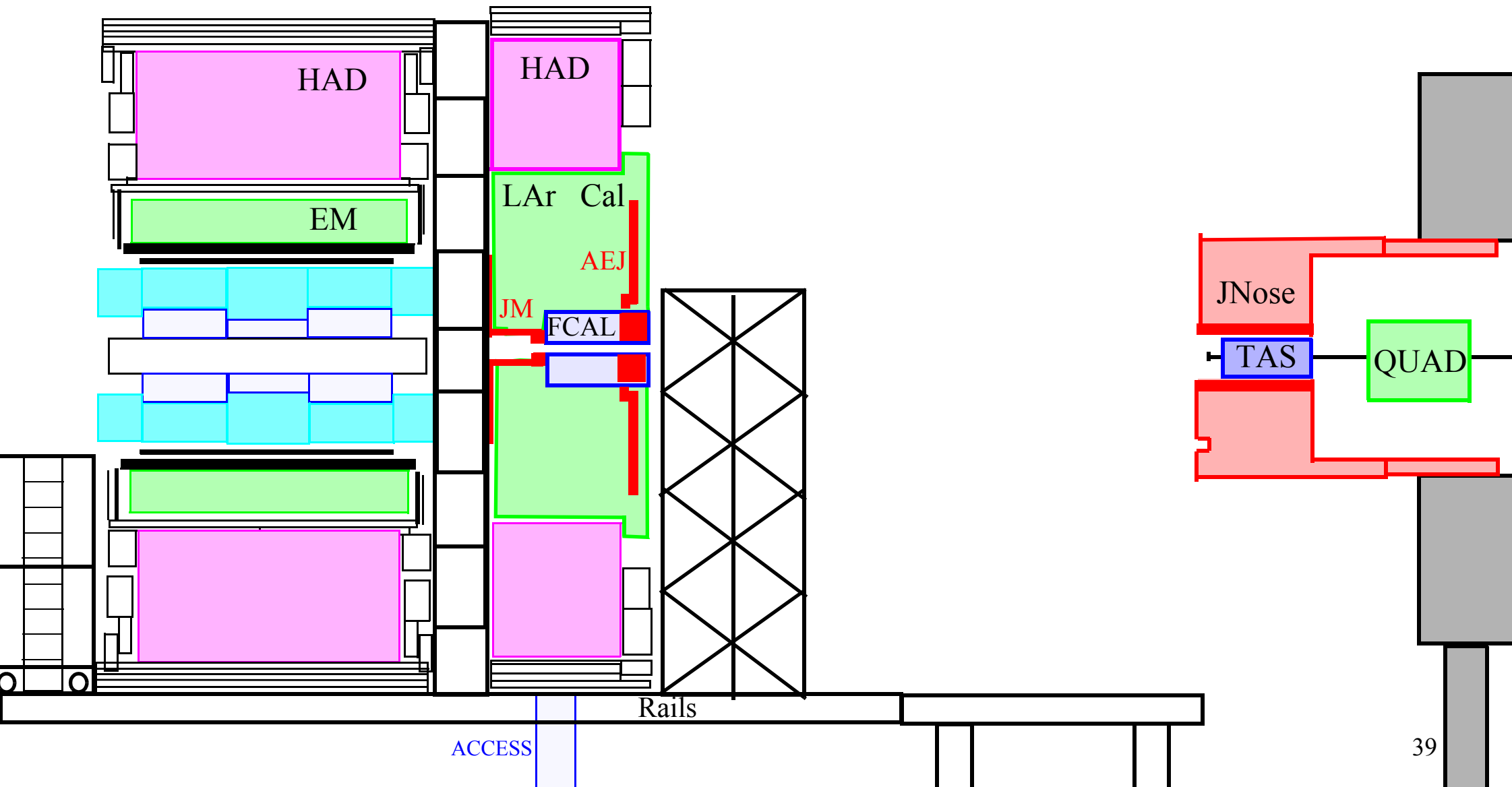


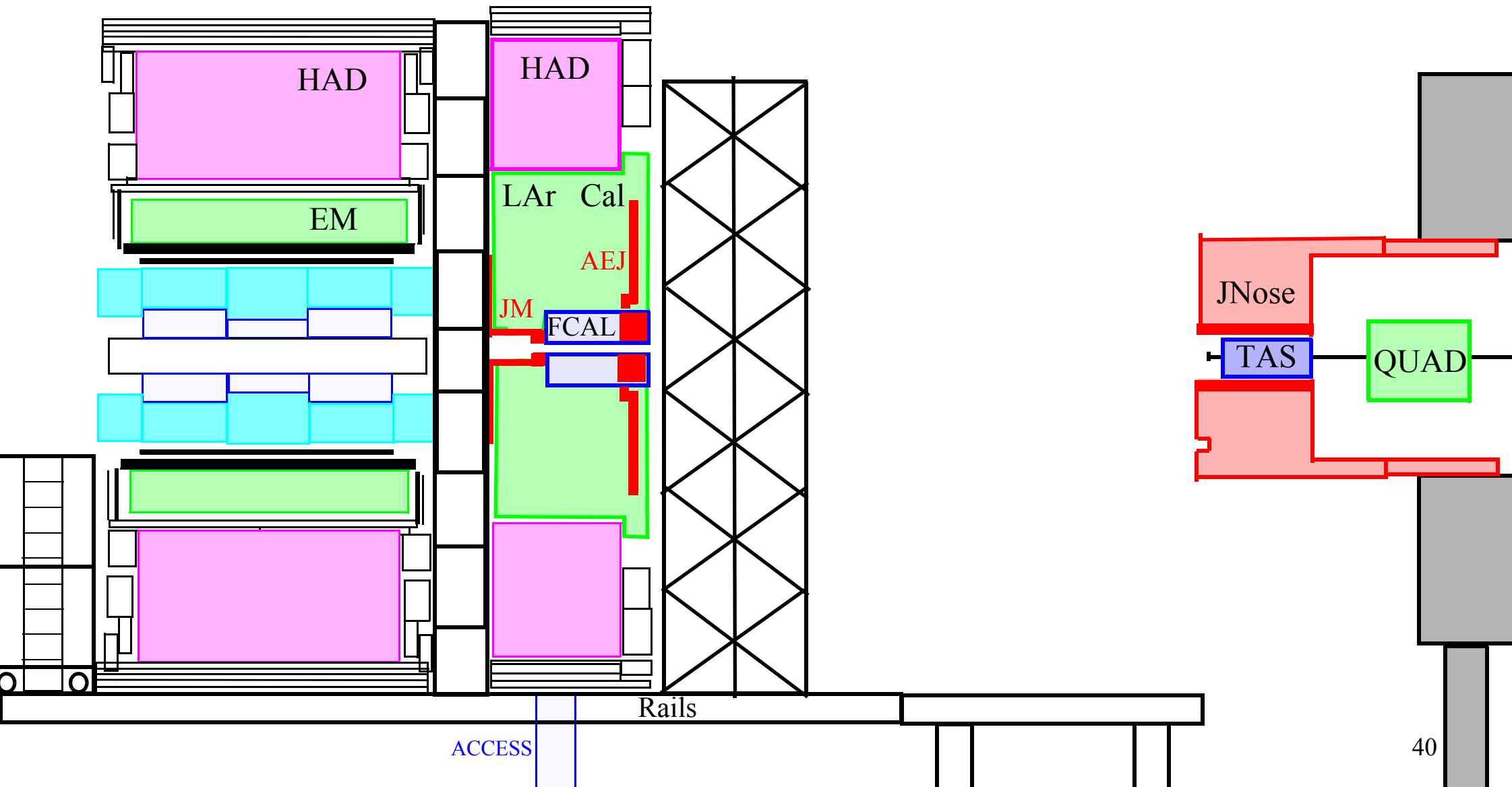


ACCESS RAILS

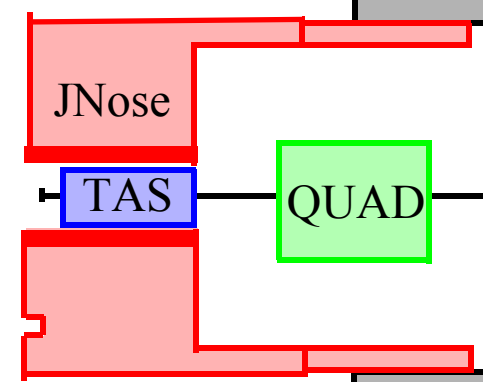
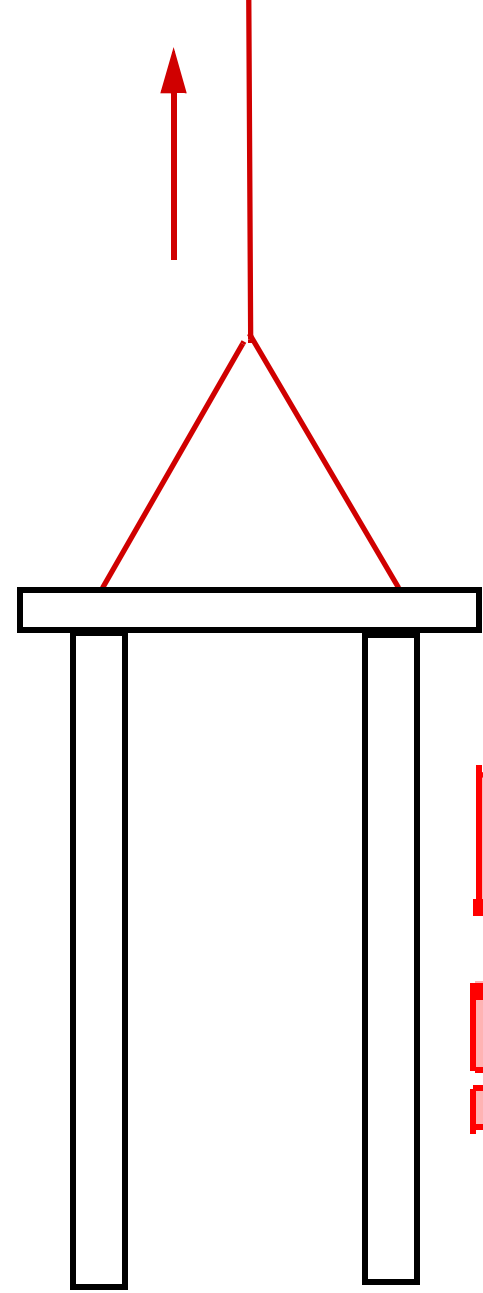
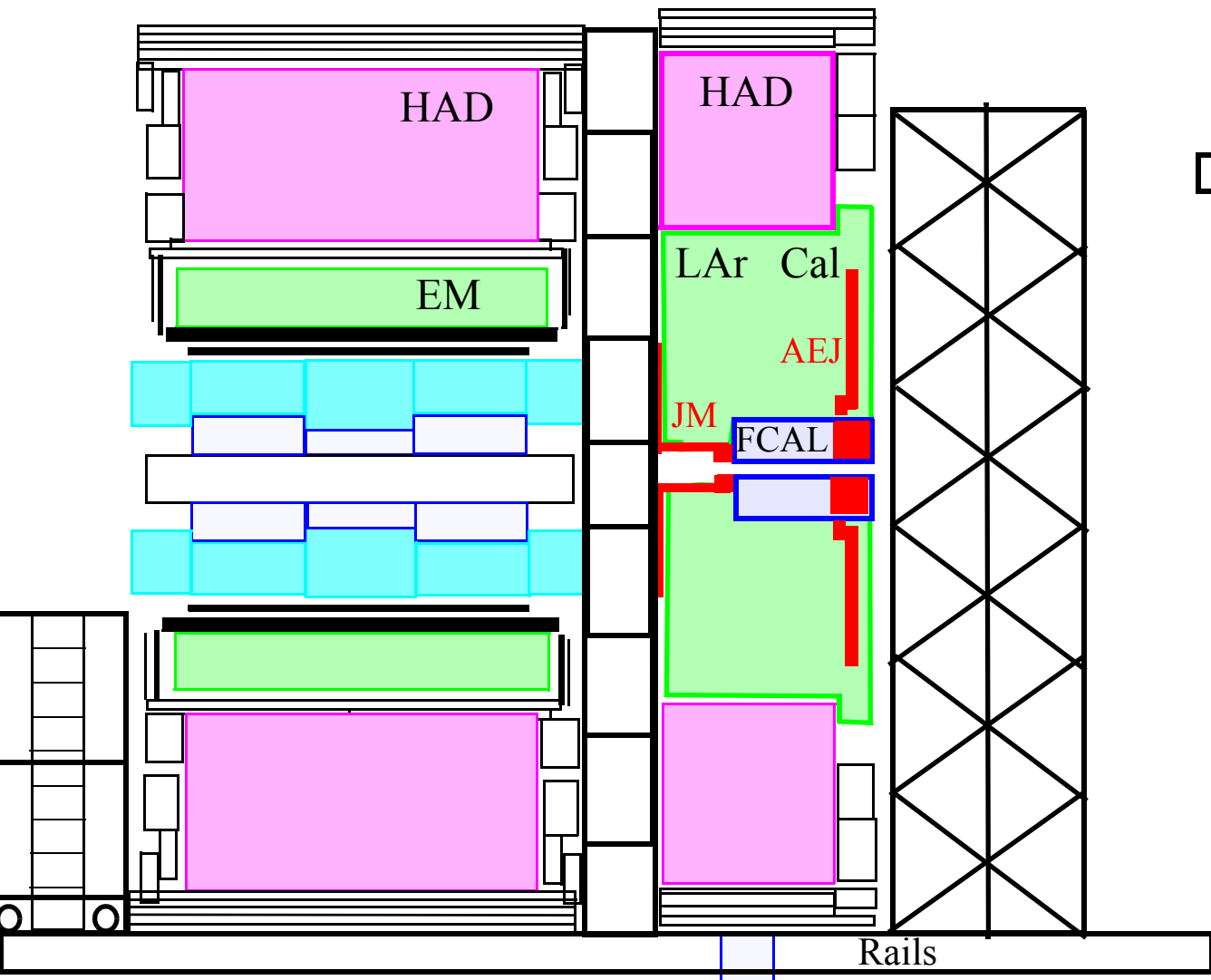
Build scaffolding.

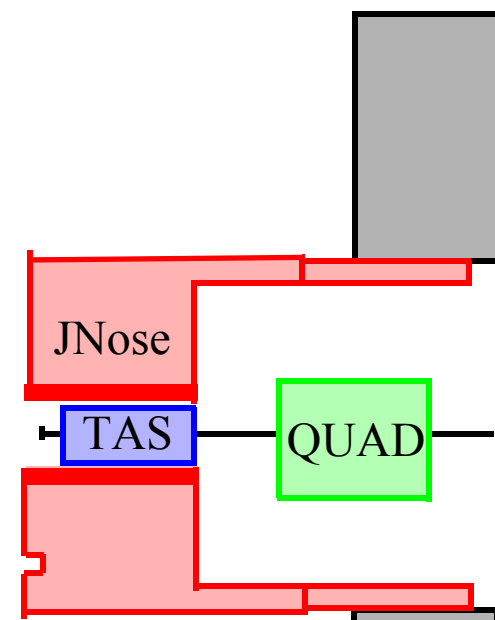
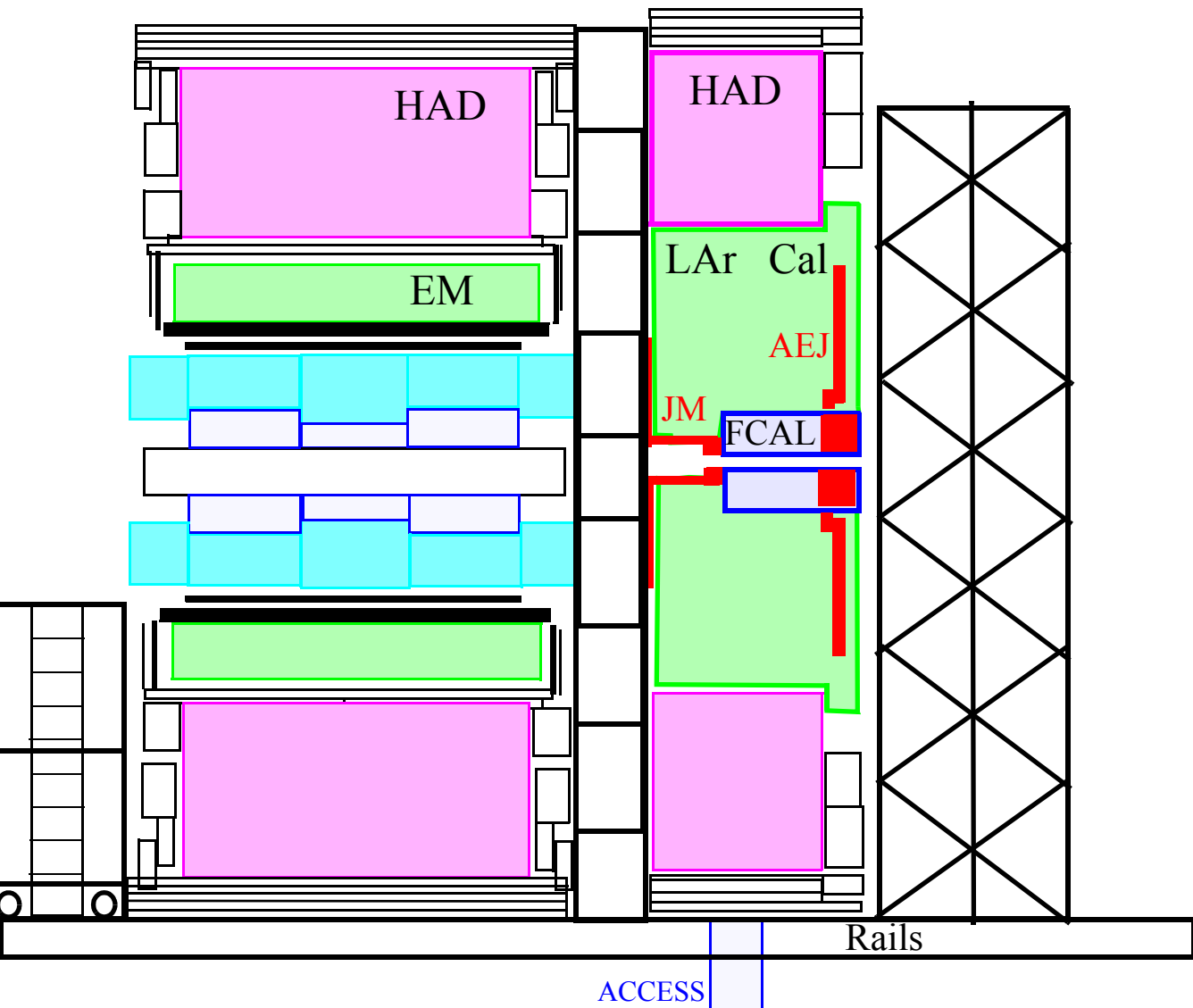






Remove HF truck.

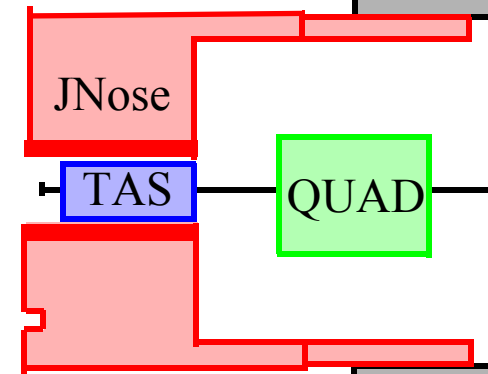
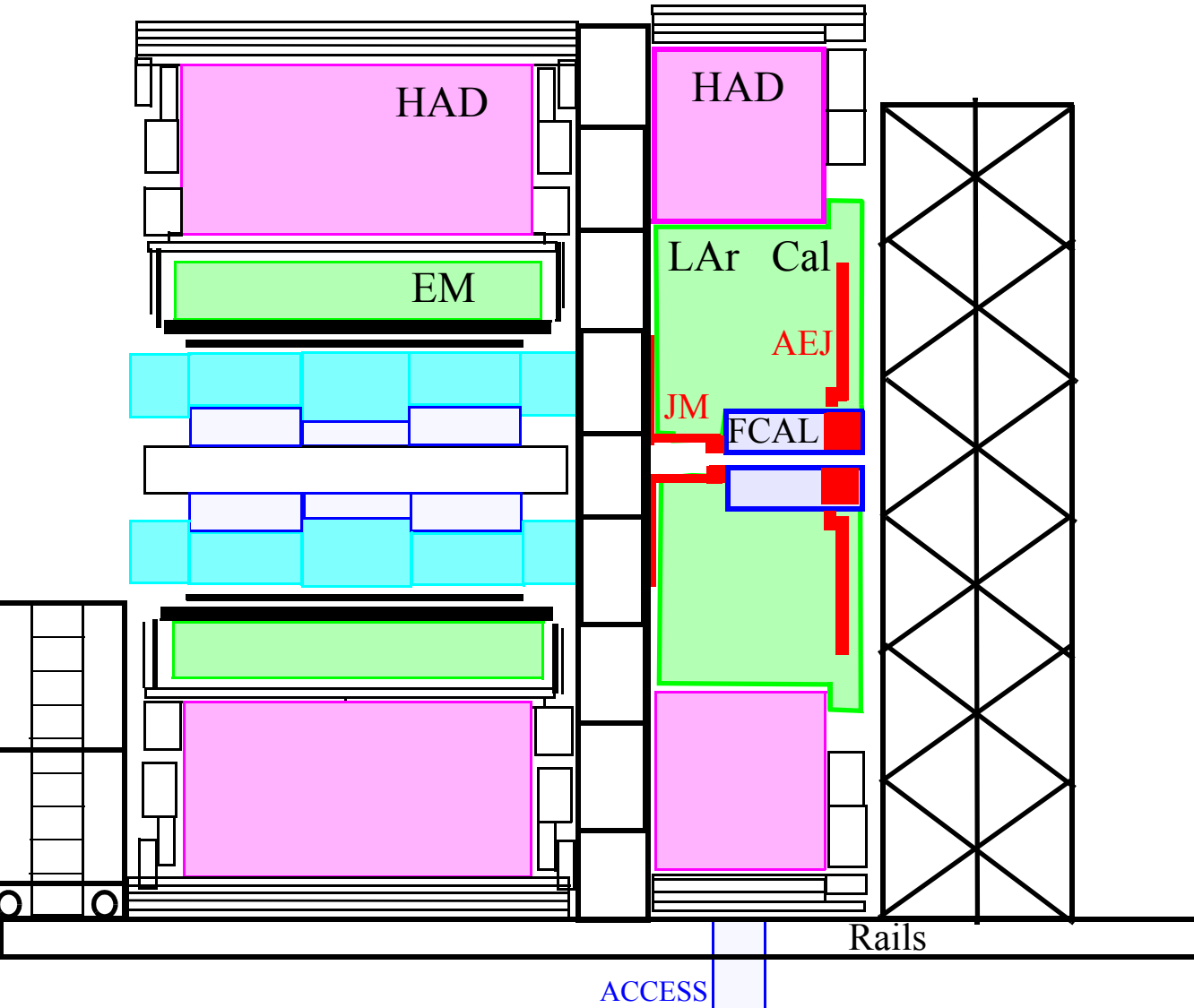


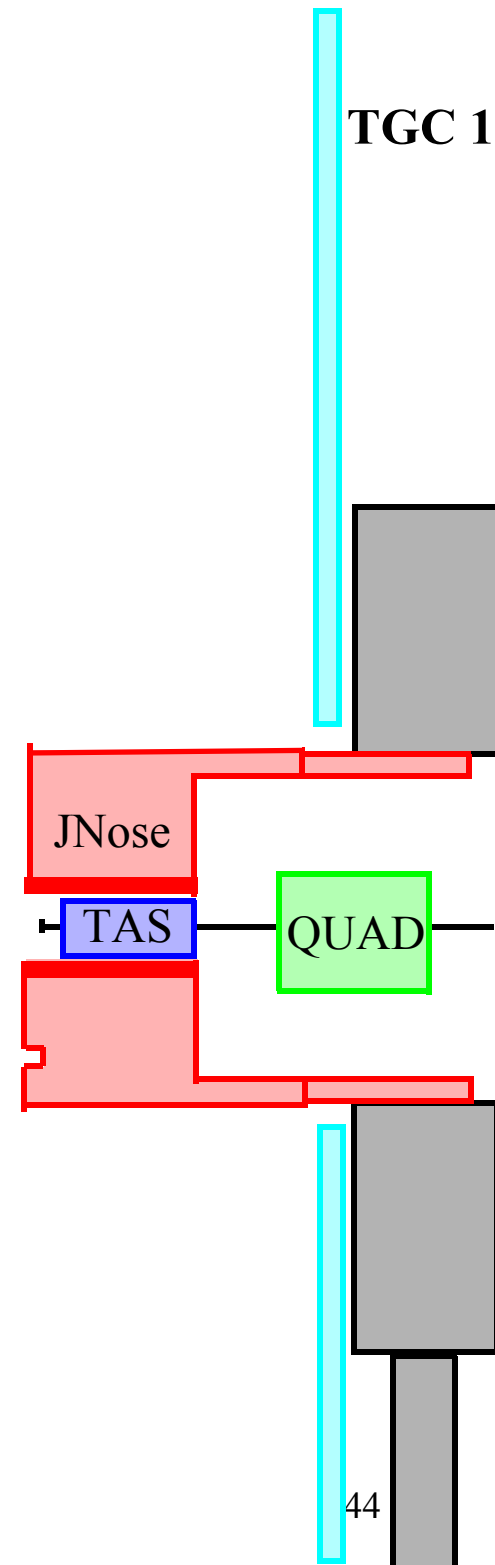
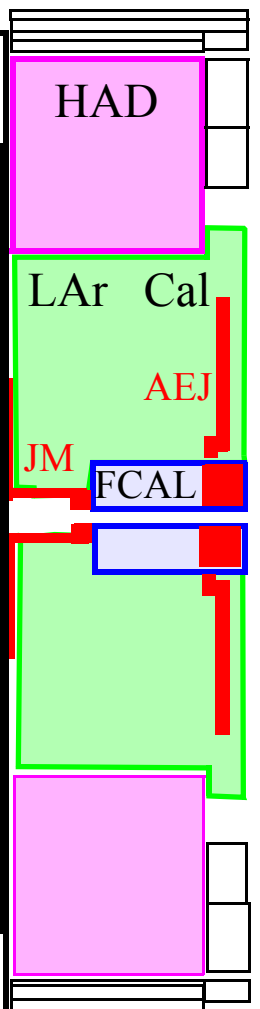
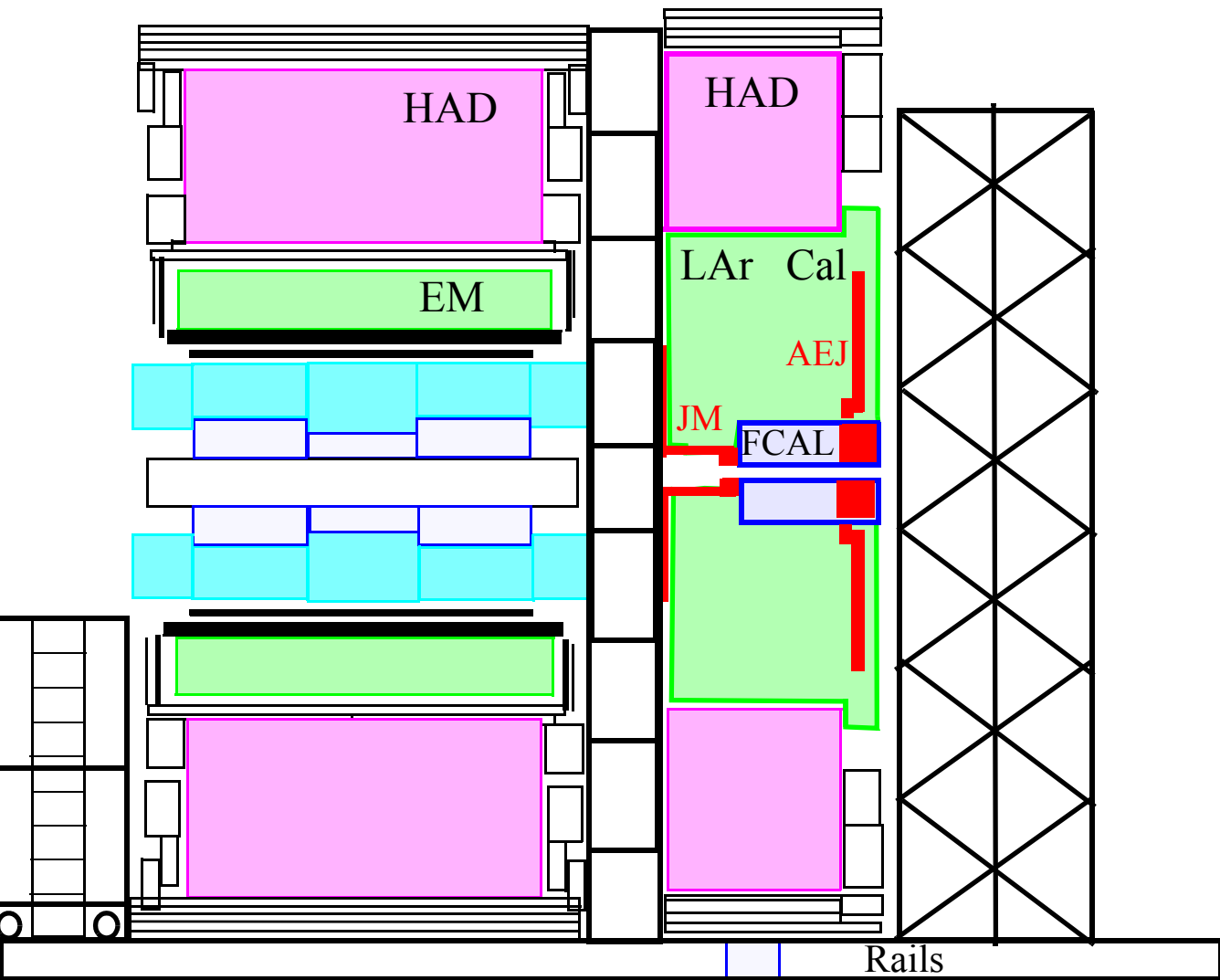


Build TGC1.



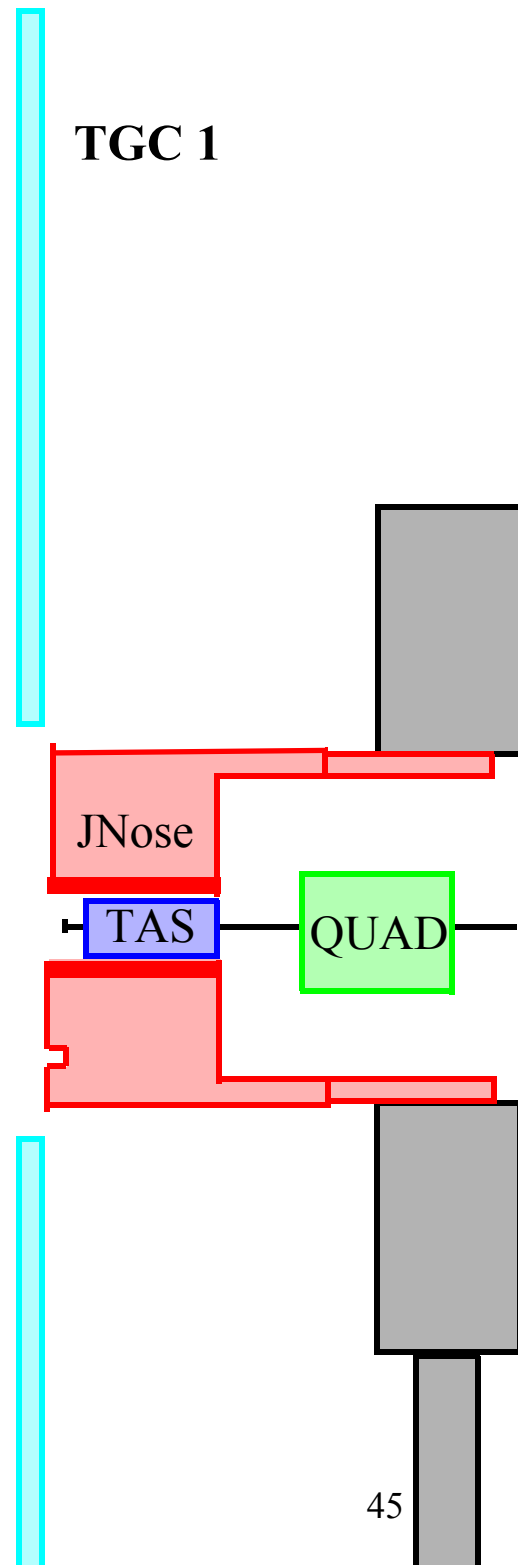
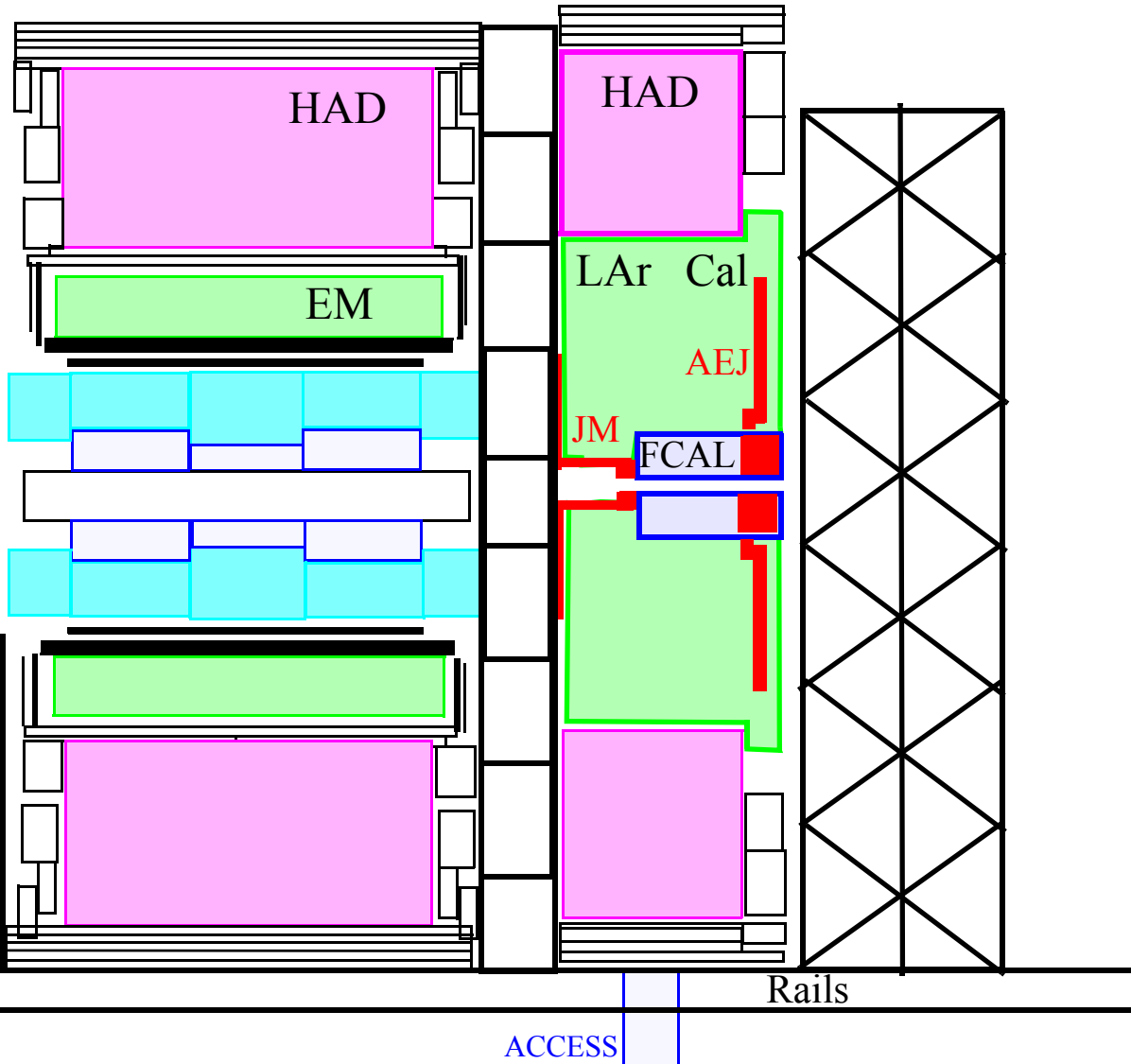
TGC 1



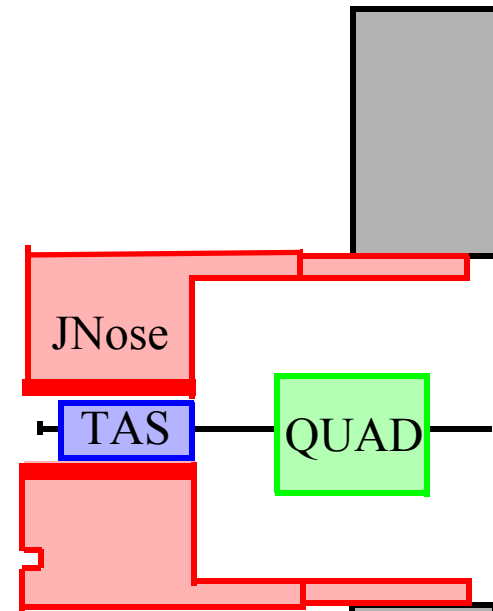
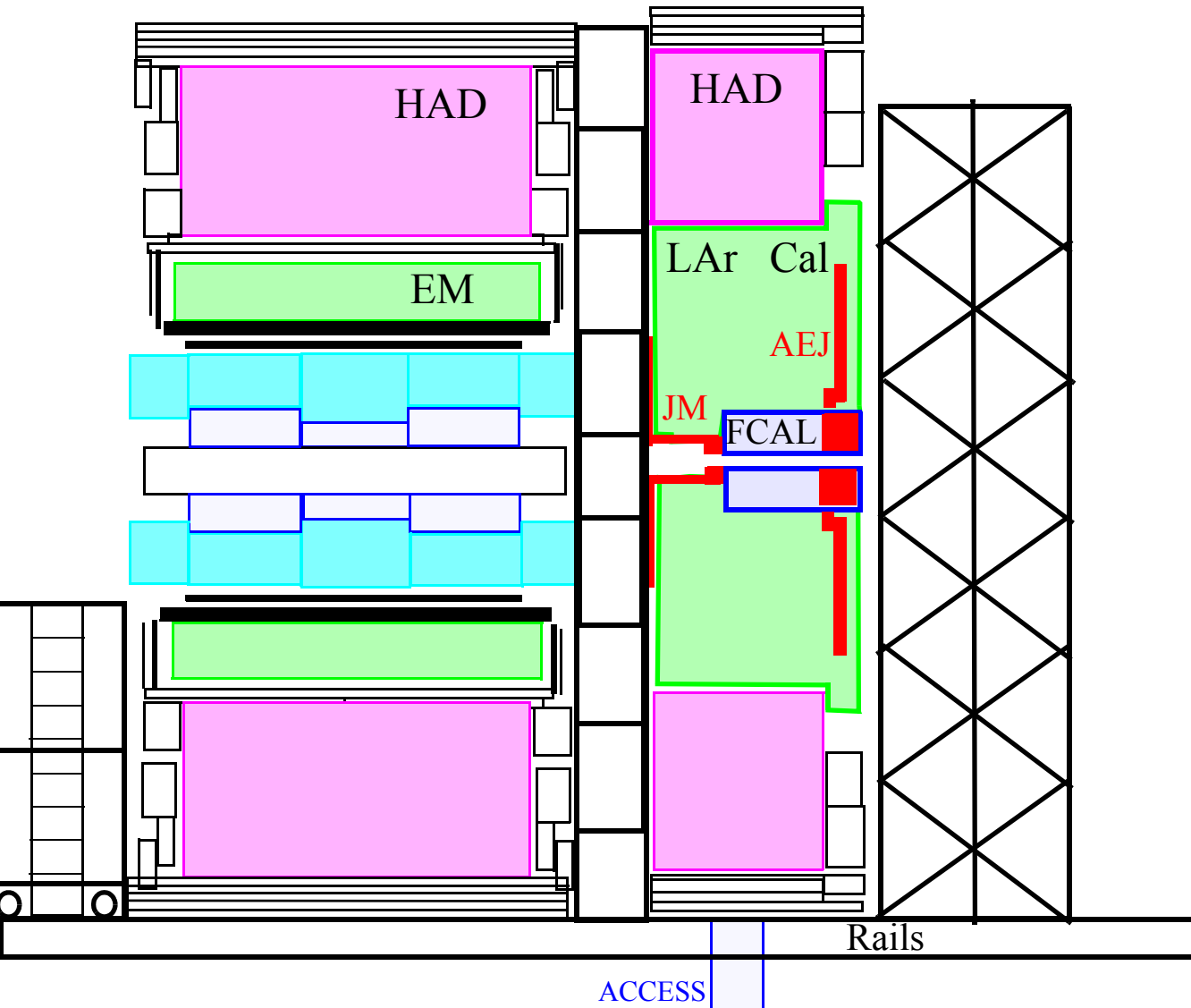


TGC 1

Move TGC1.

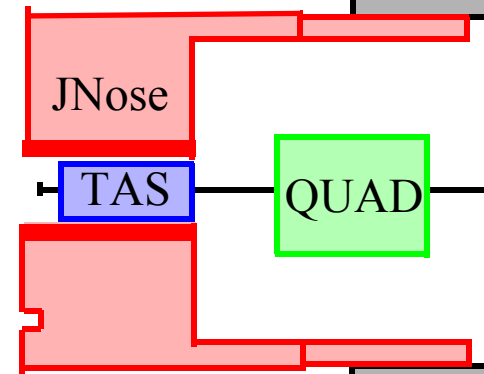
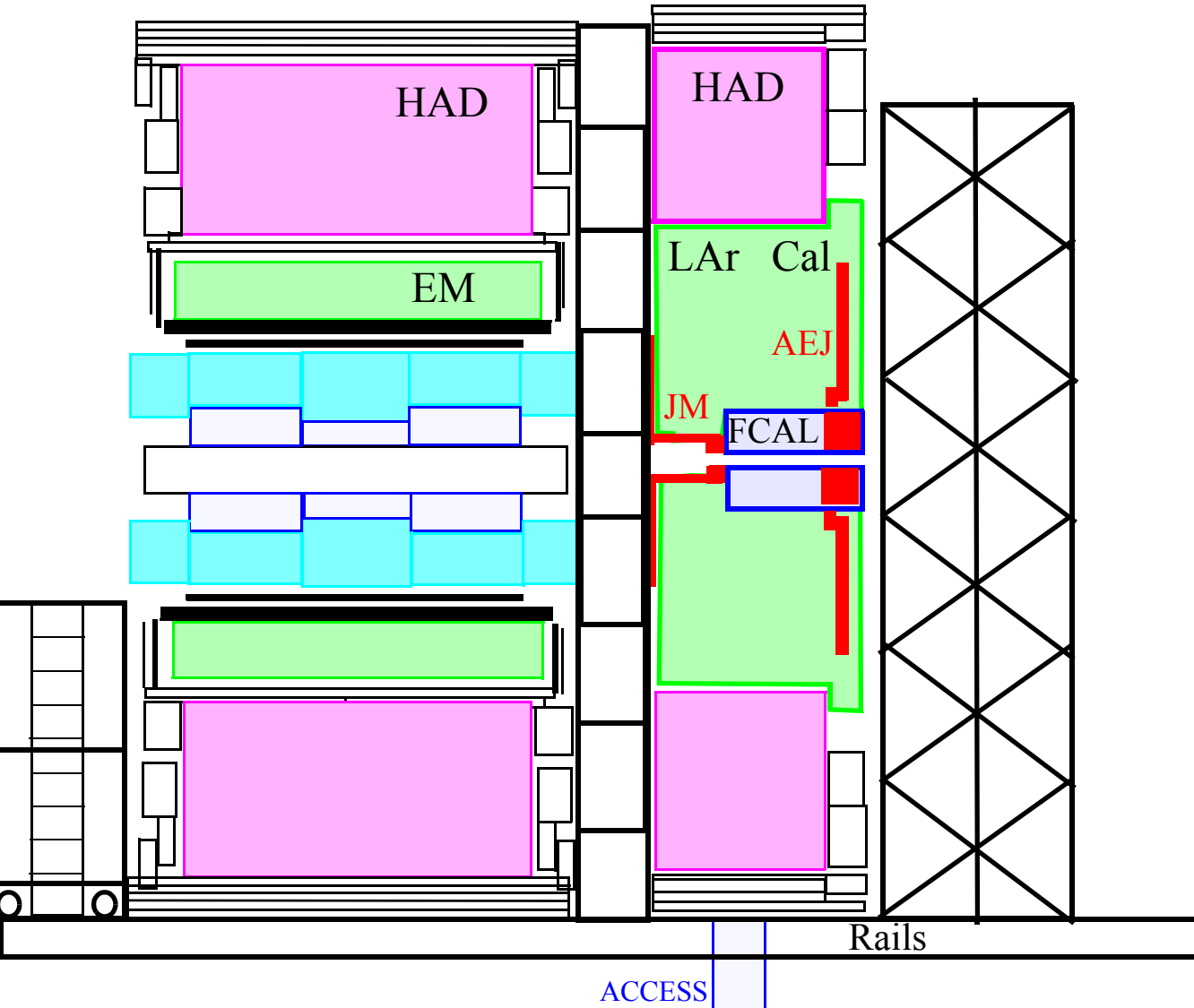


TGC 1



Build BW MDT.

TGC 1

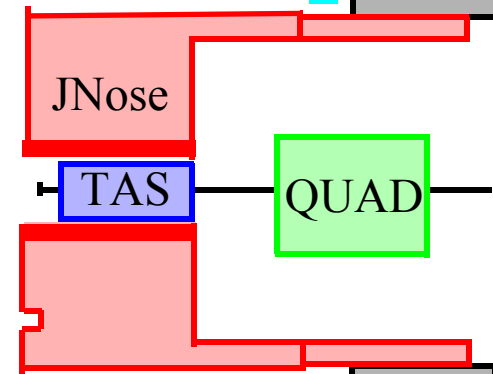
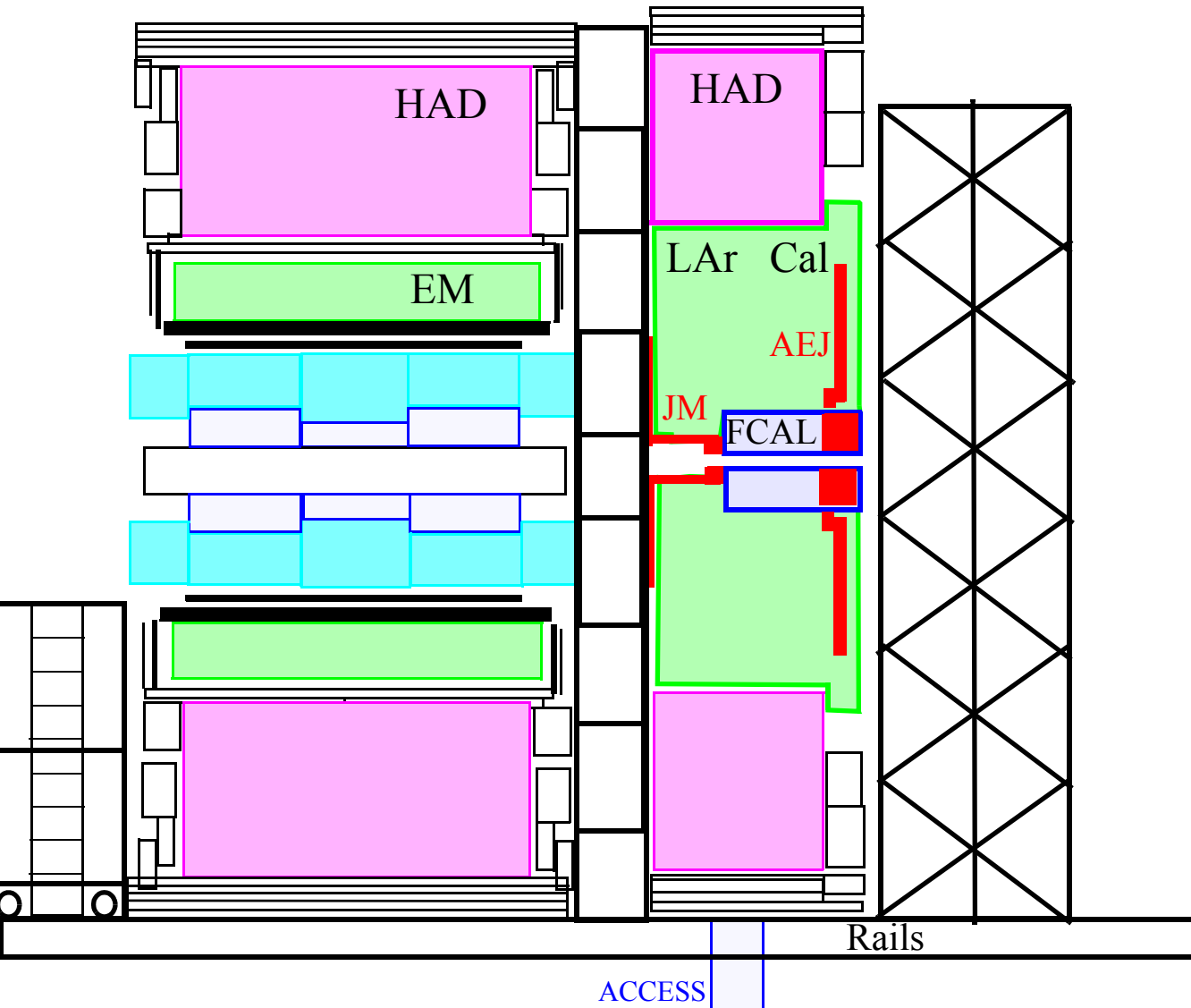


MDT

Build BW MDT.

TGC 1

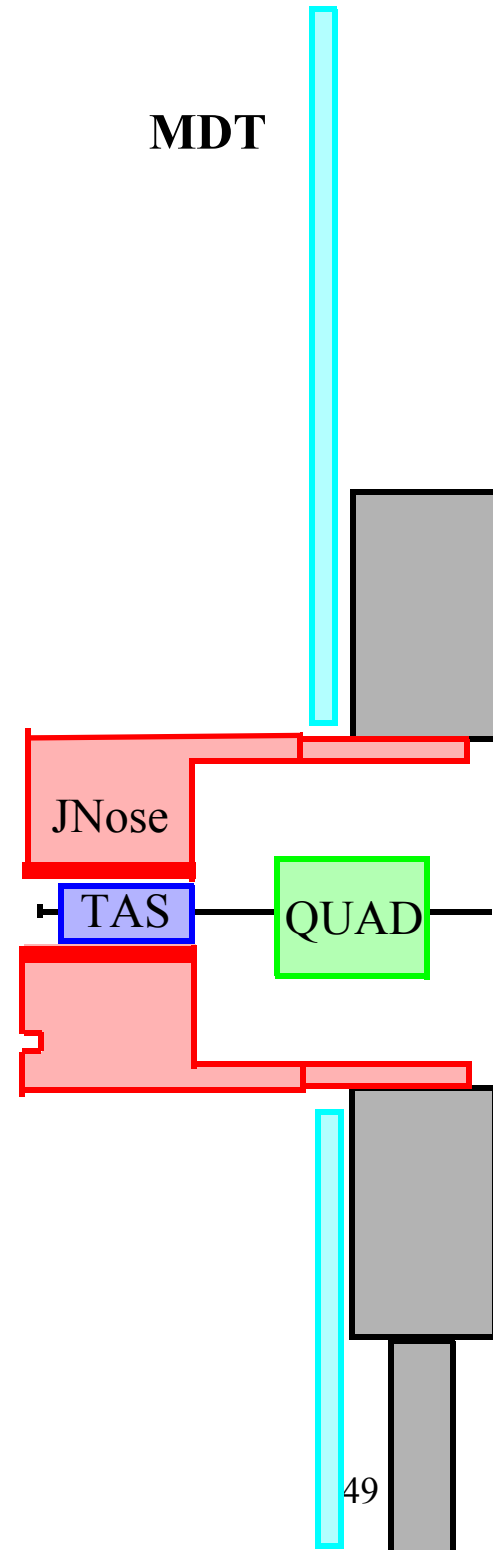
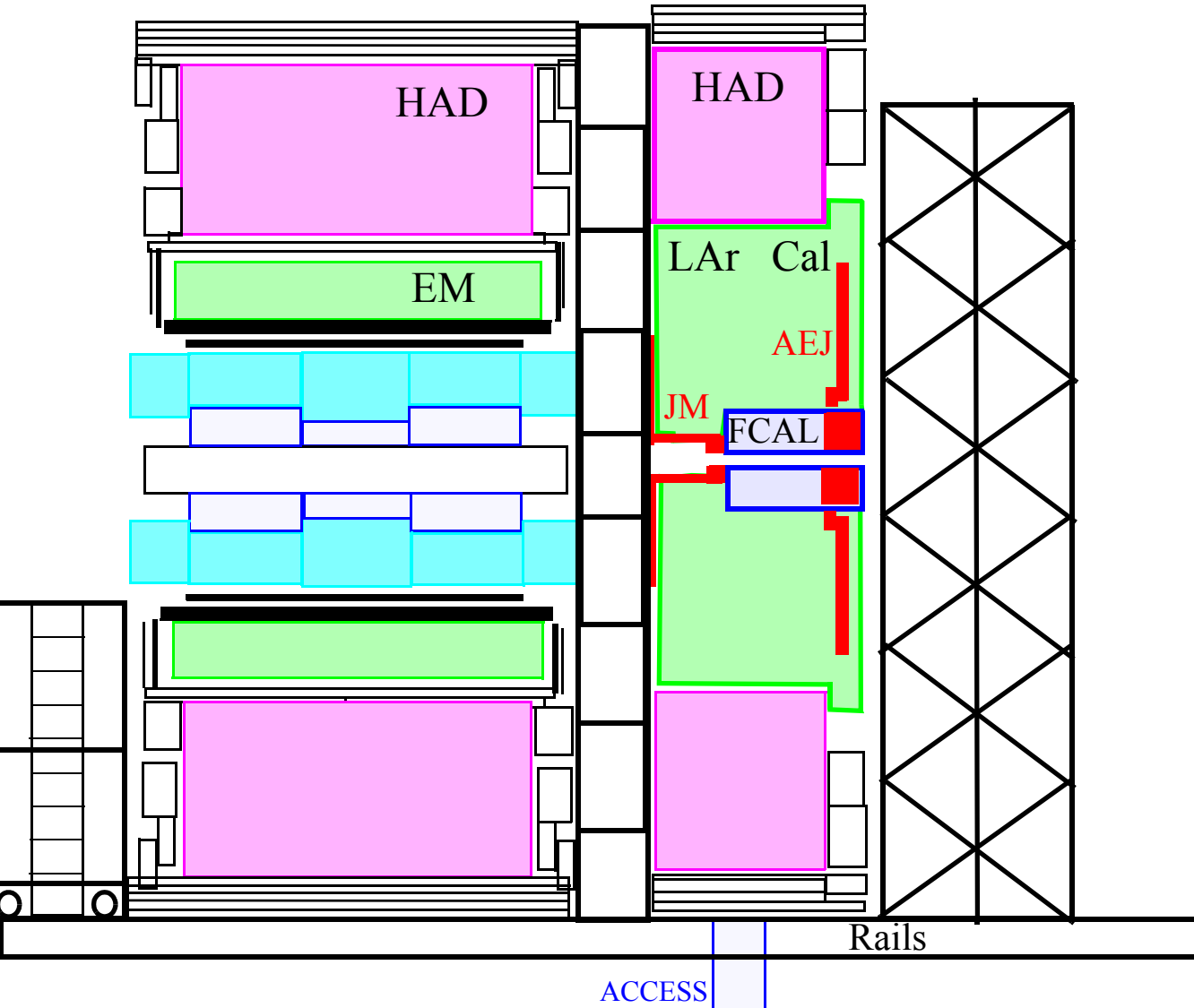
MDT

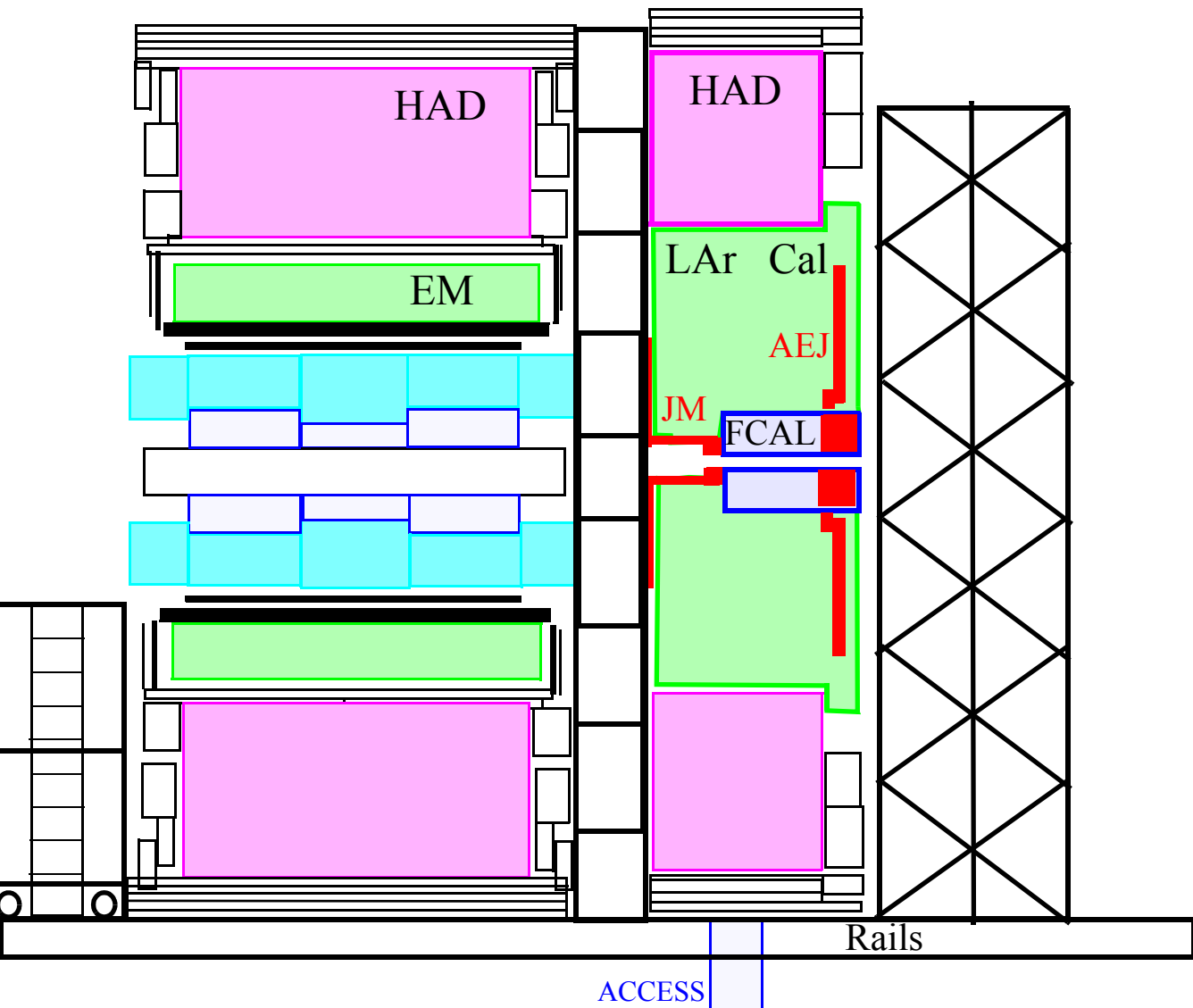


Move TGC1.

TGC 1

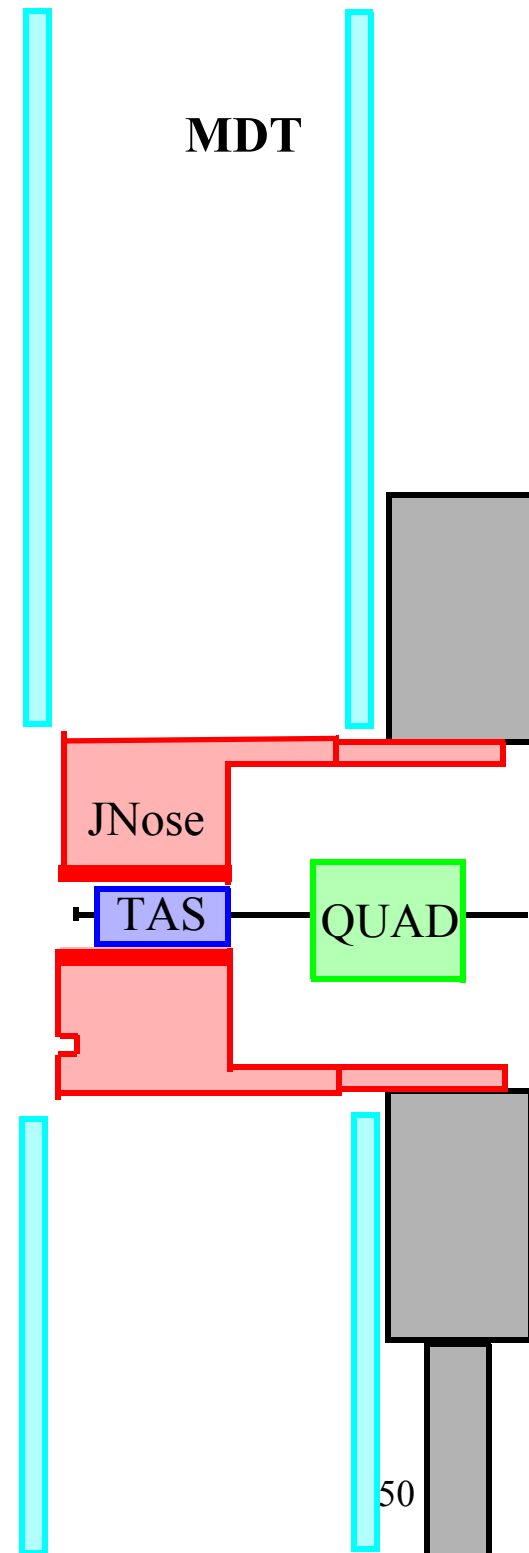
MDT

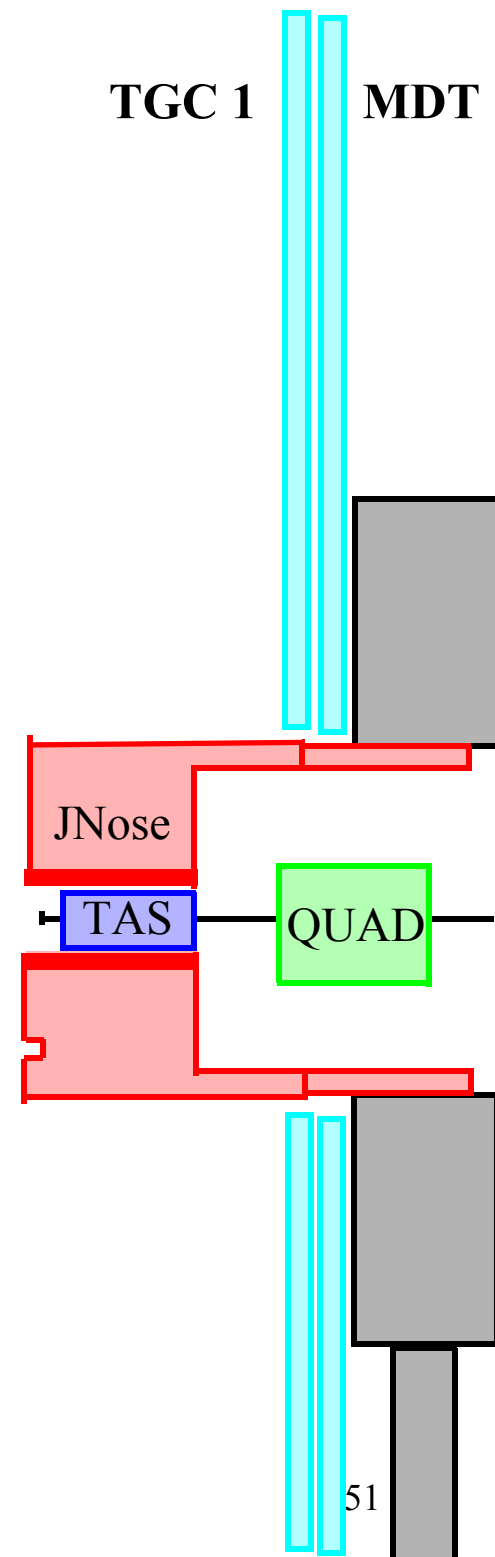
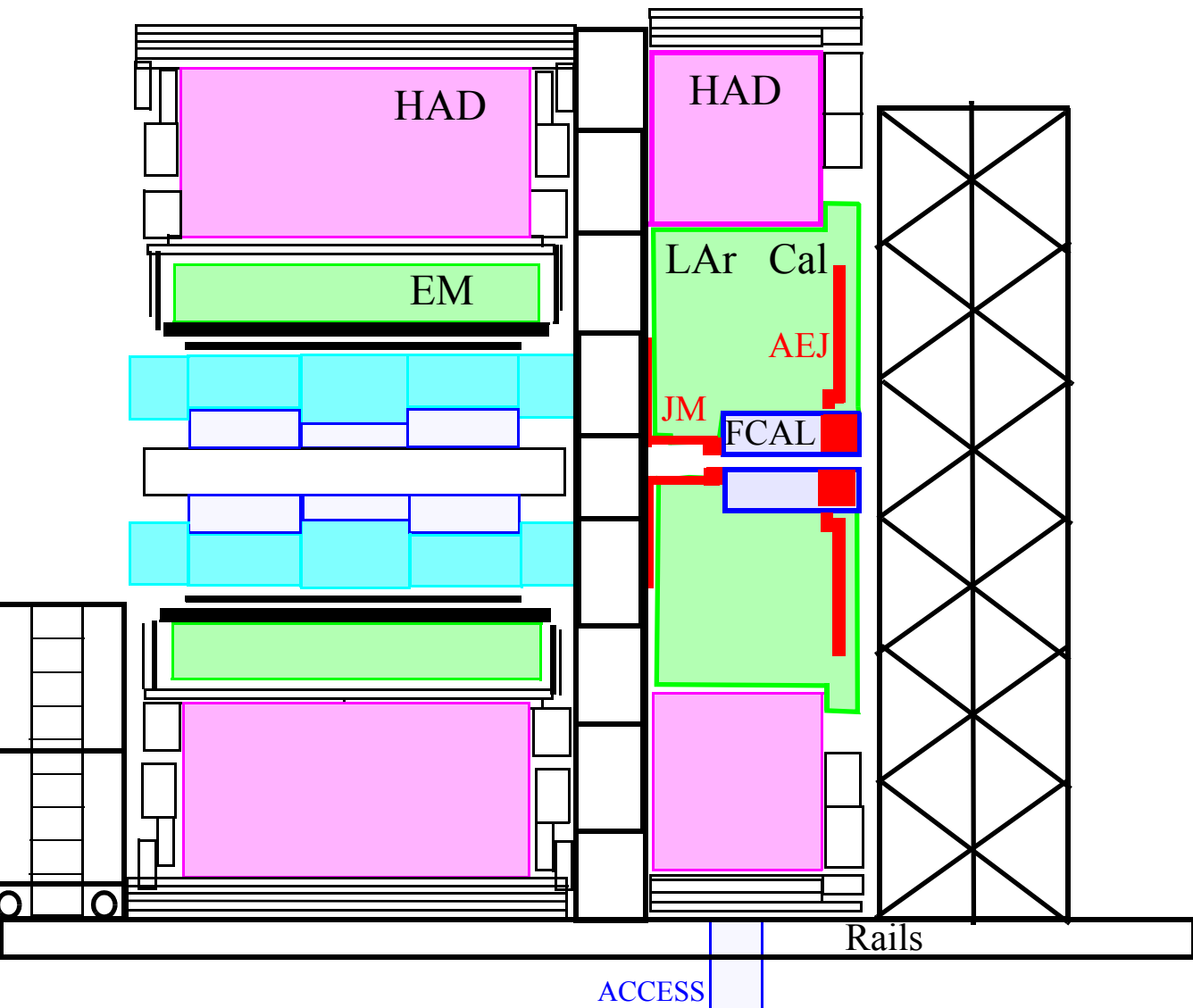




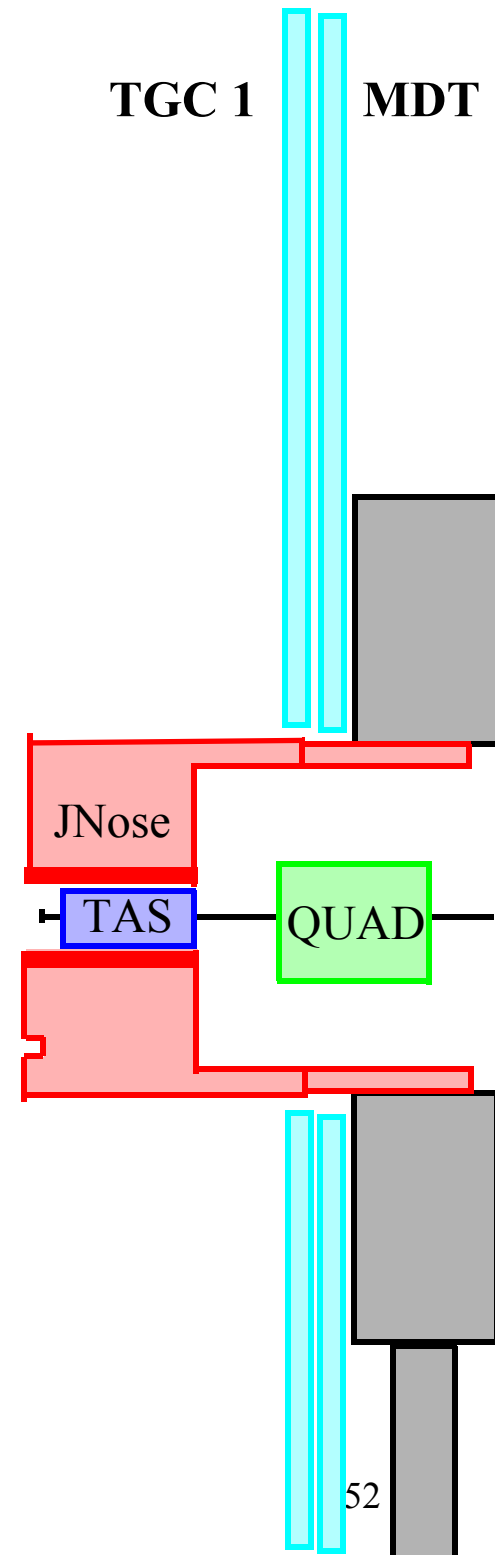
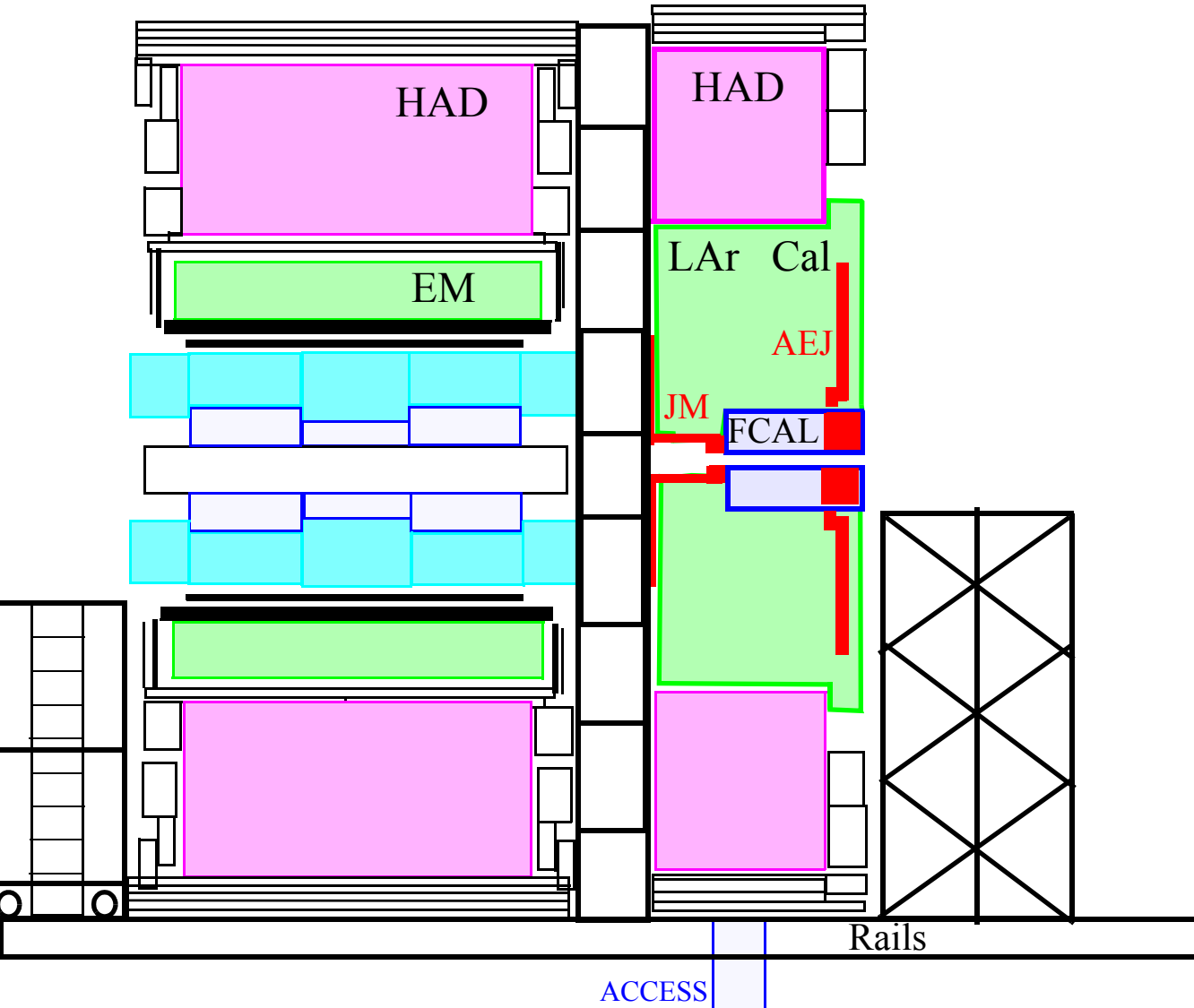
TGC 1

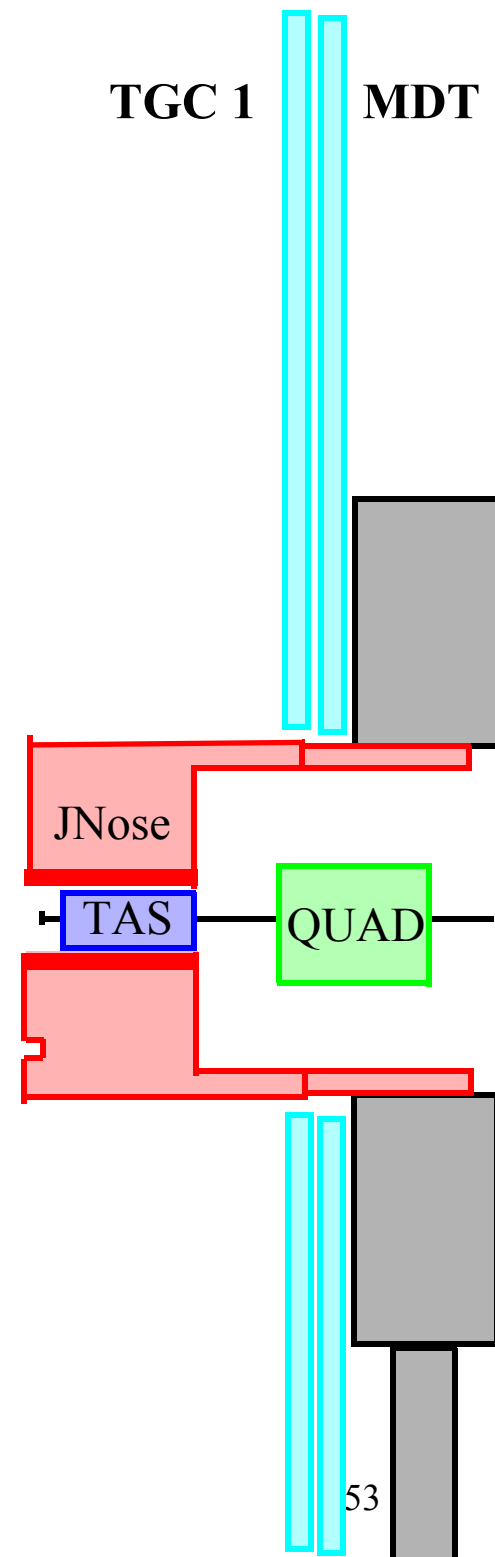
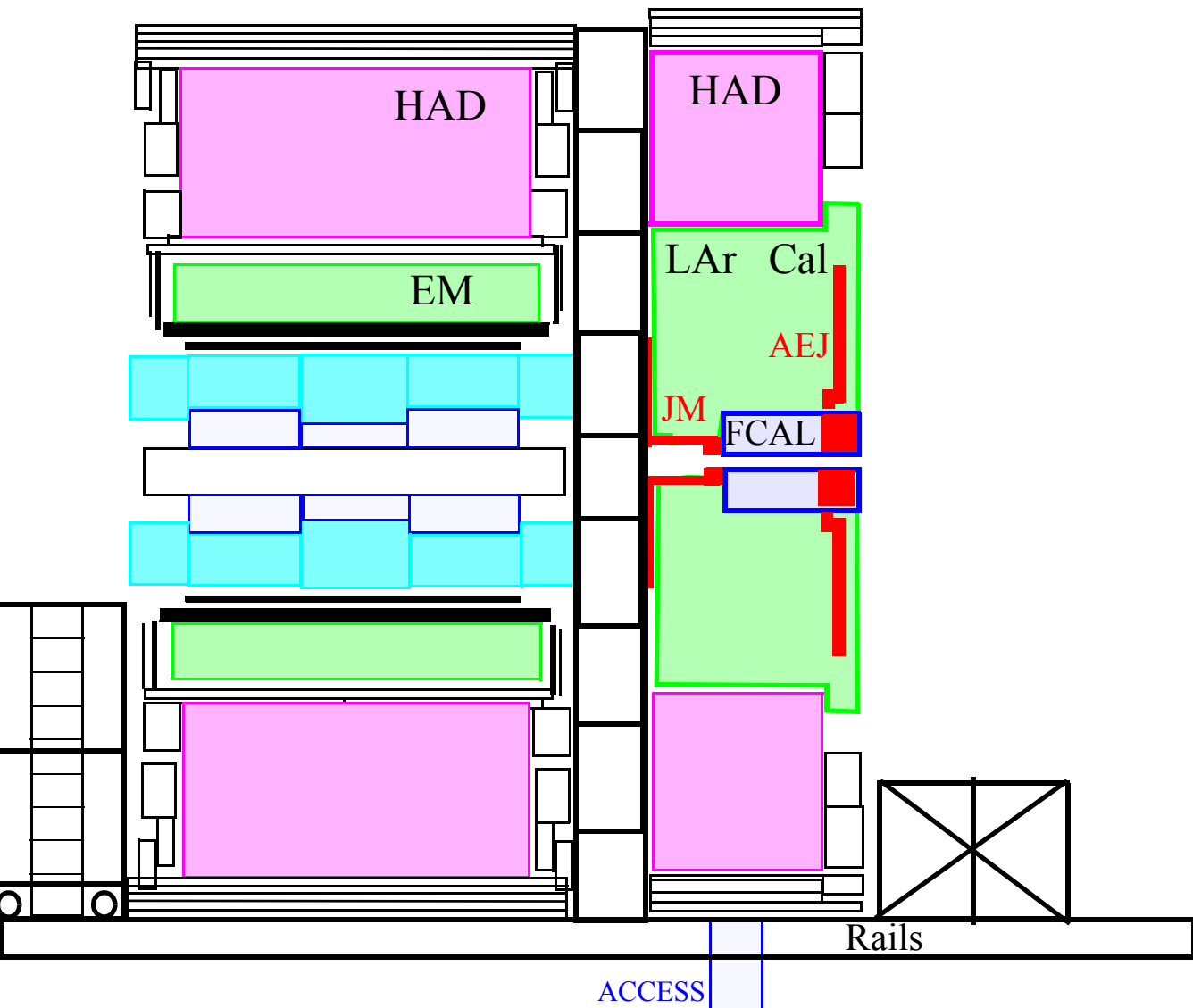
MDT

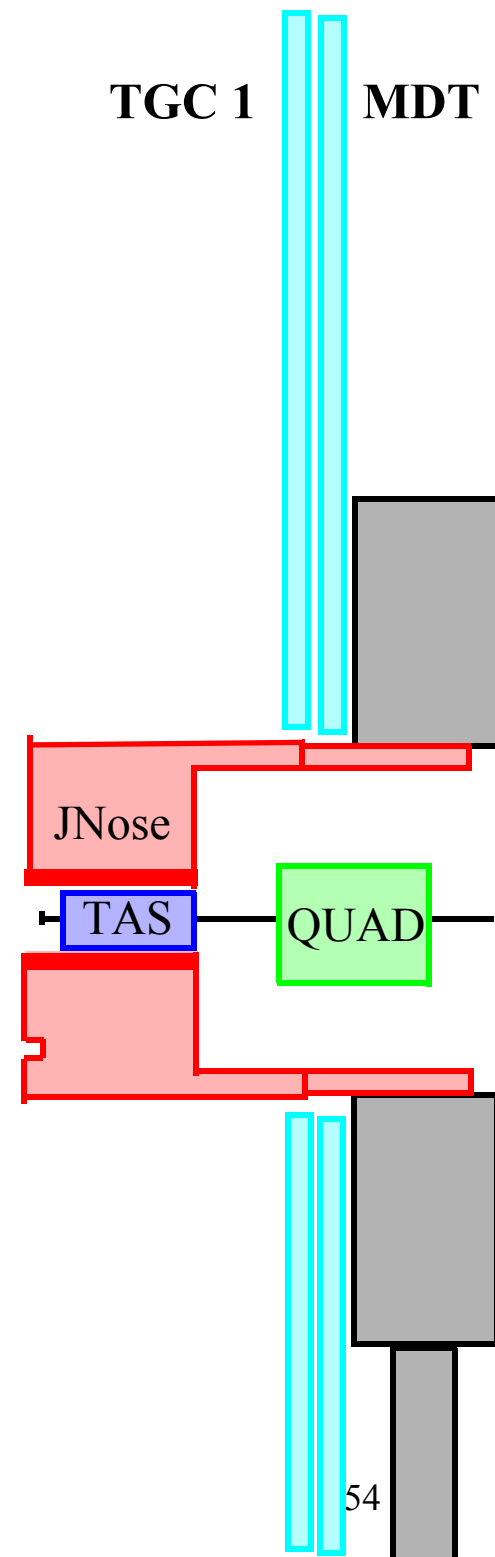
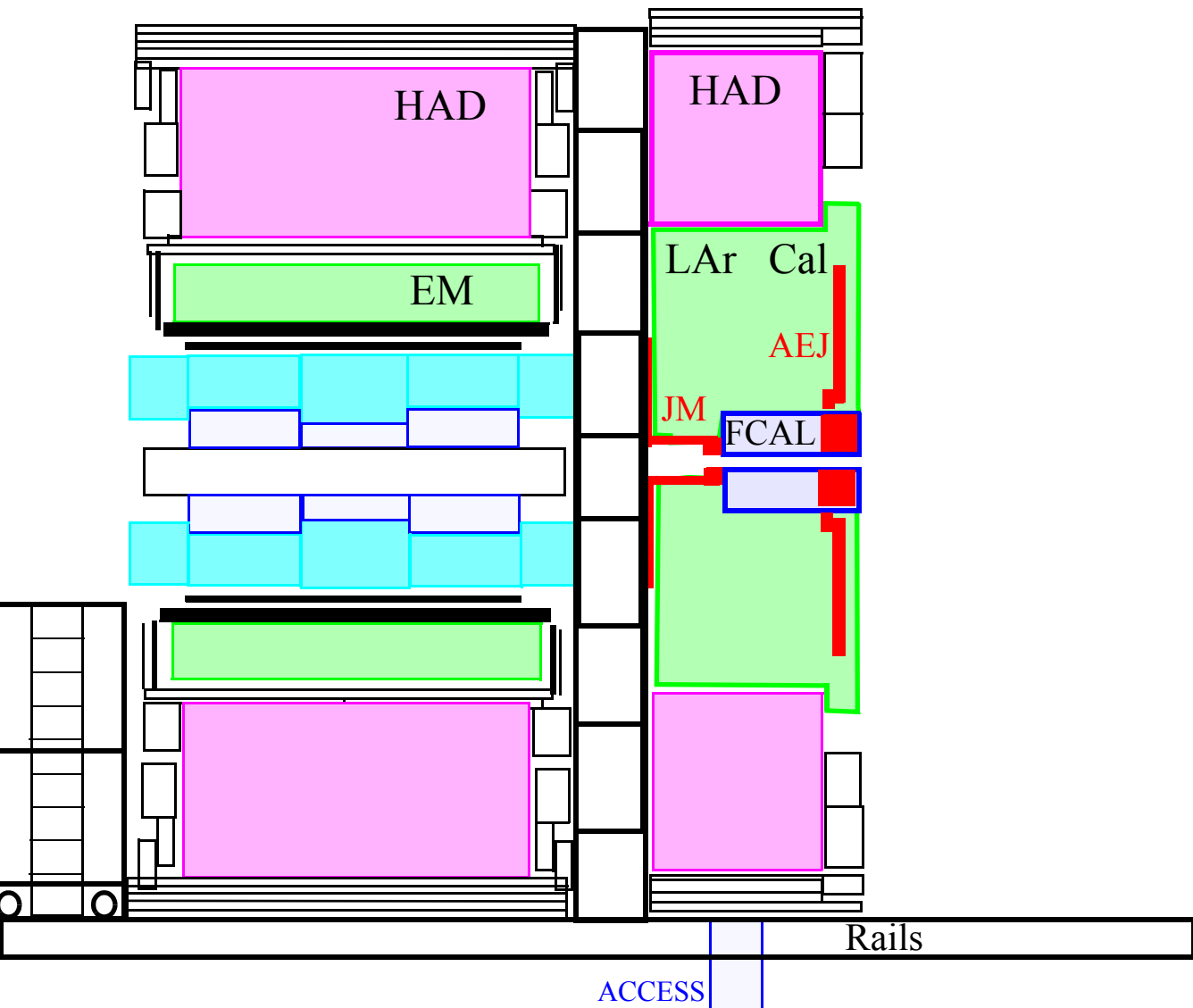




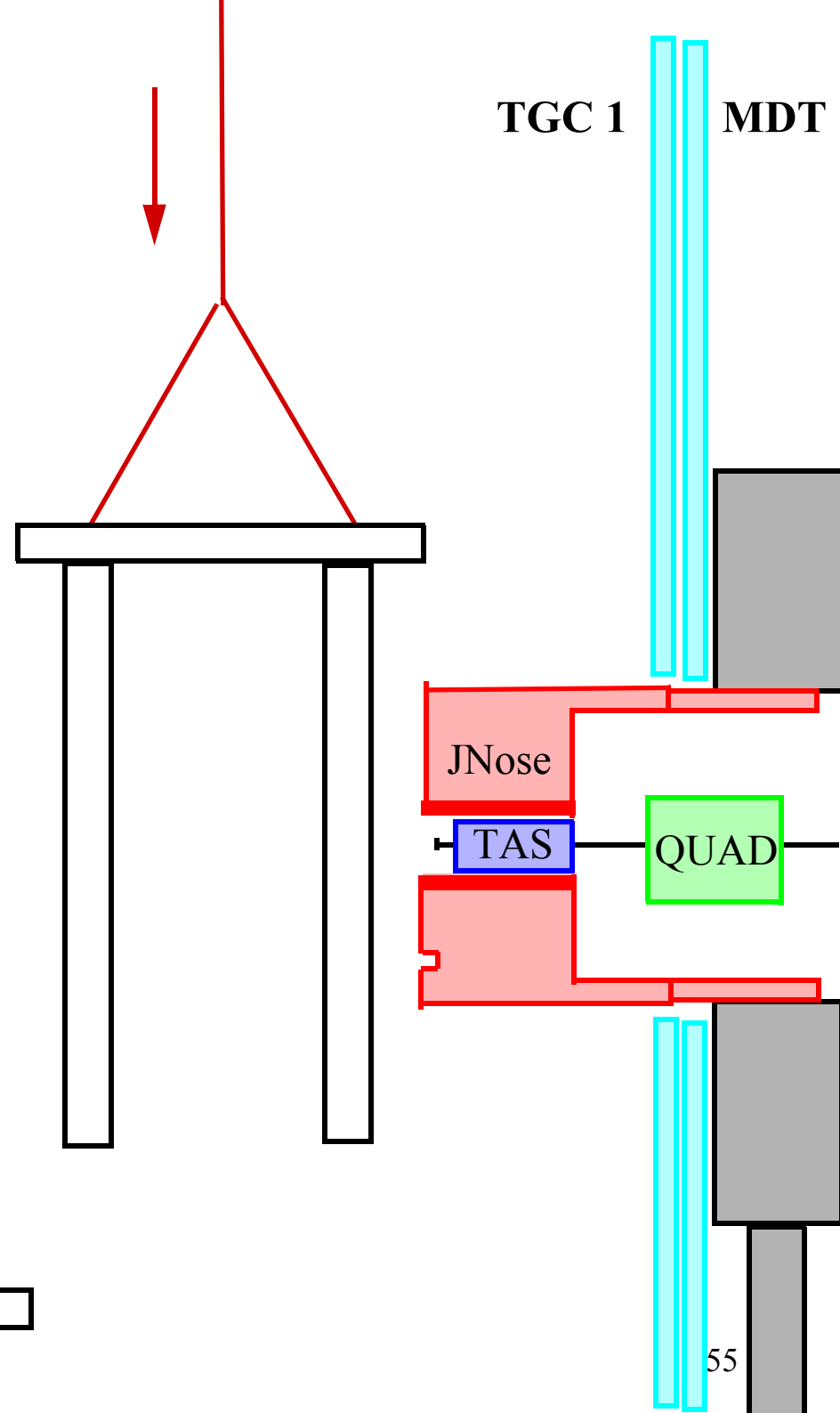
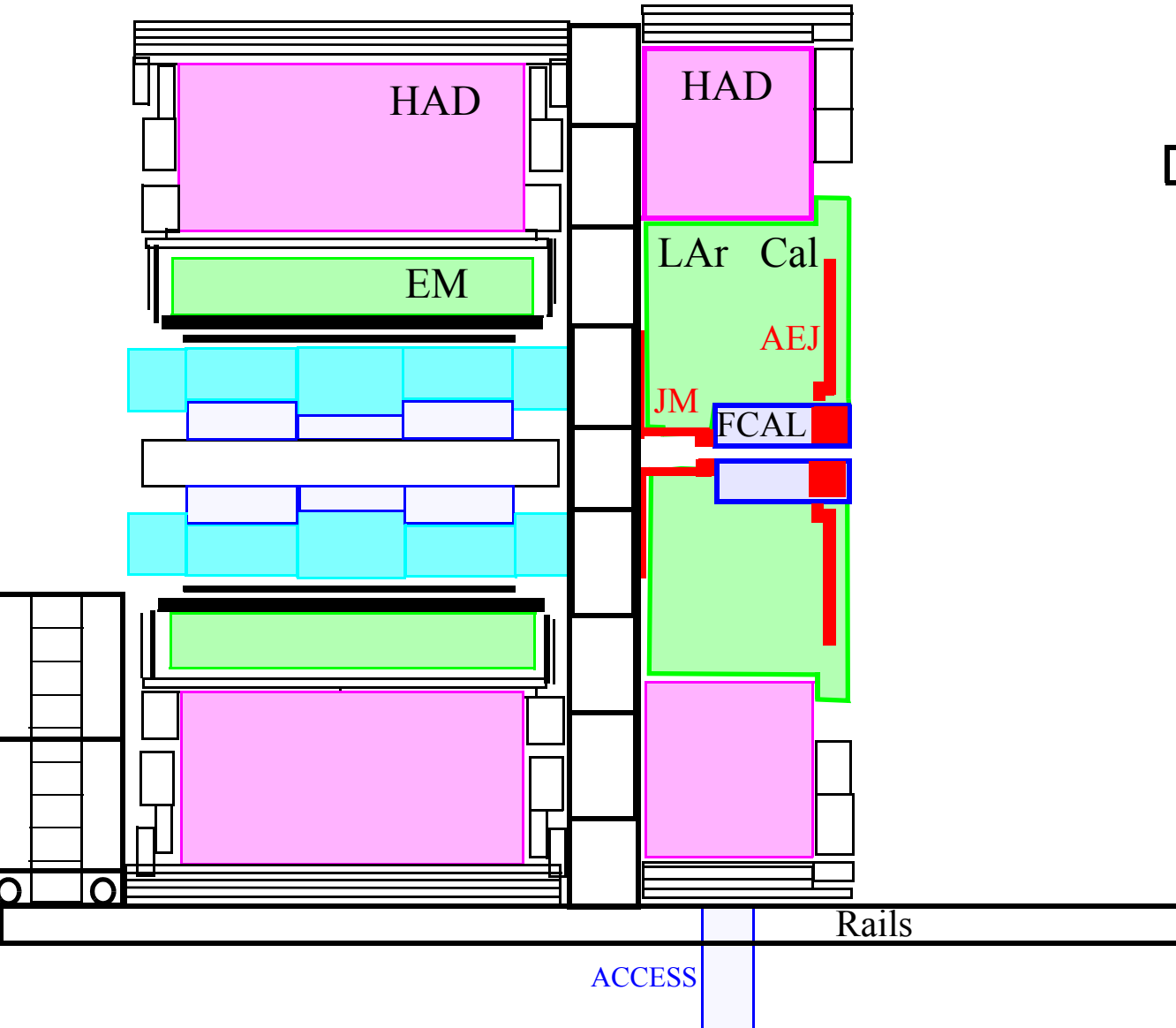
Remove scaffolding.

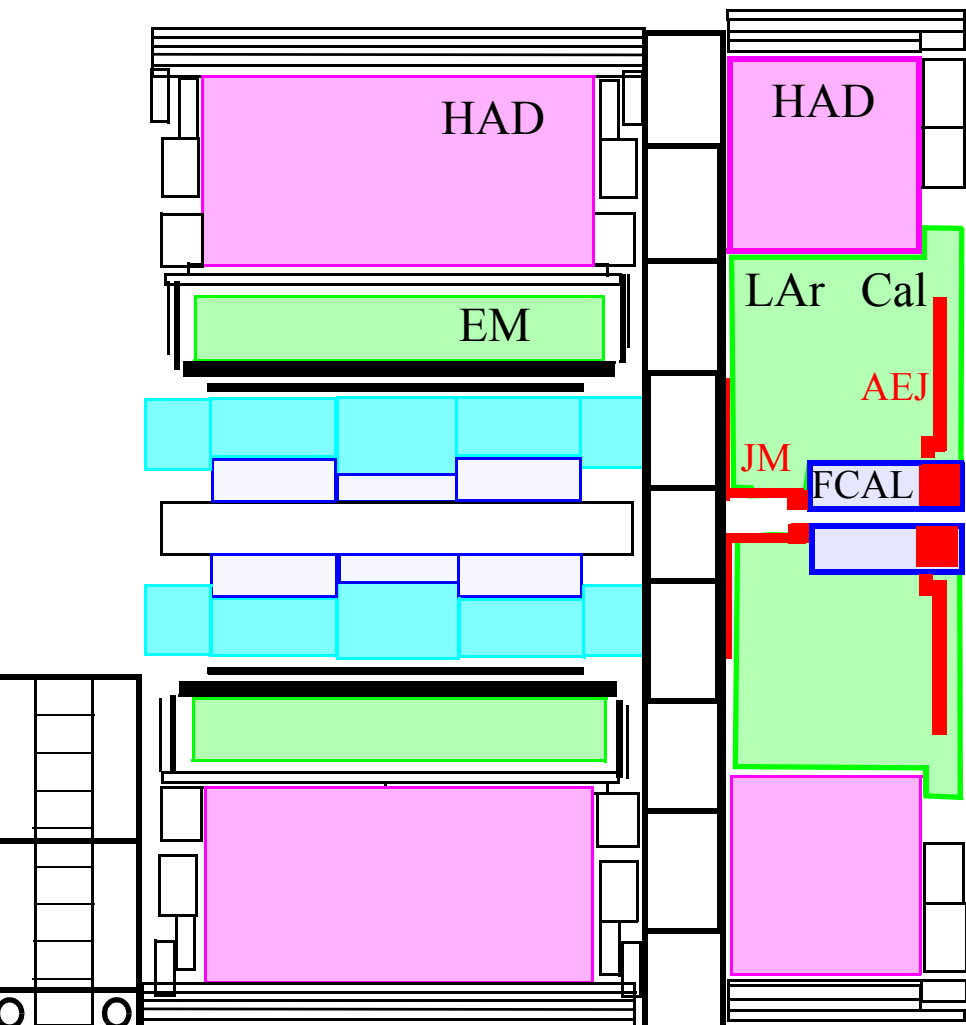






Install HF truck.



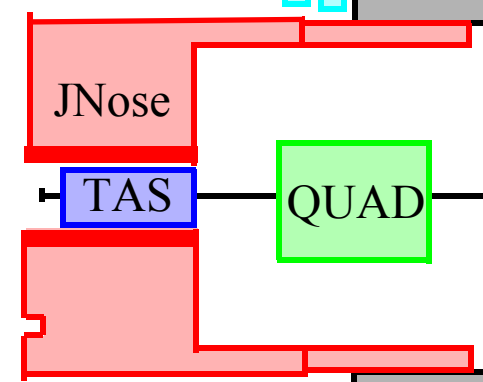


Rails

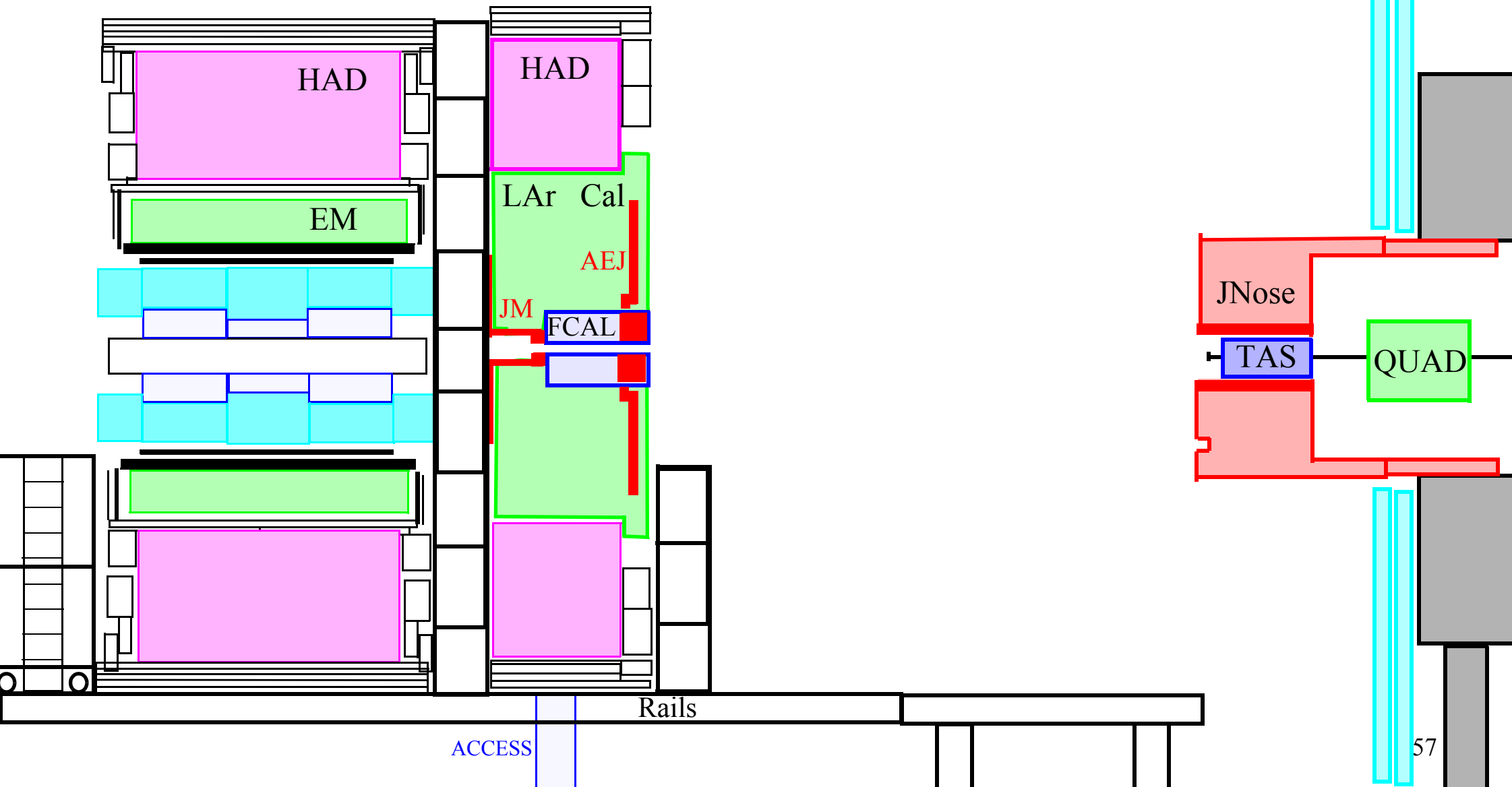
ACCESS

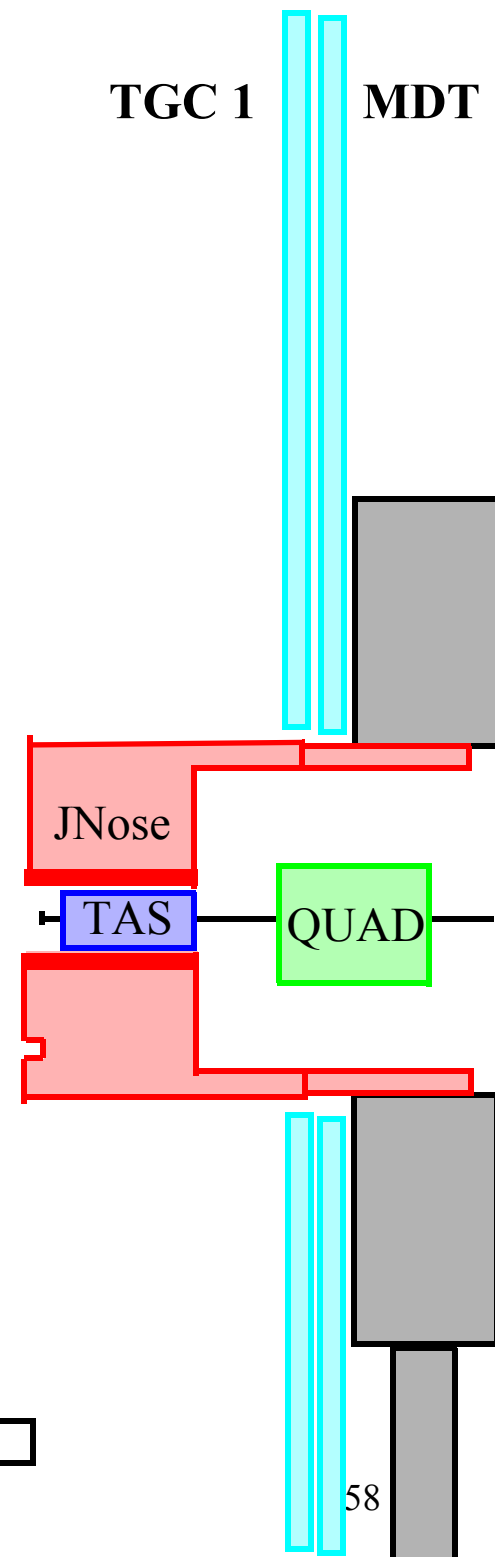
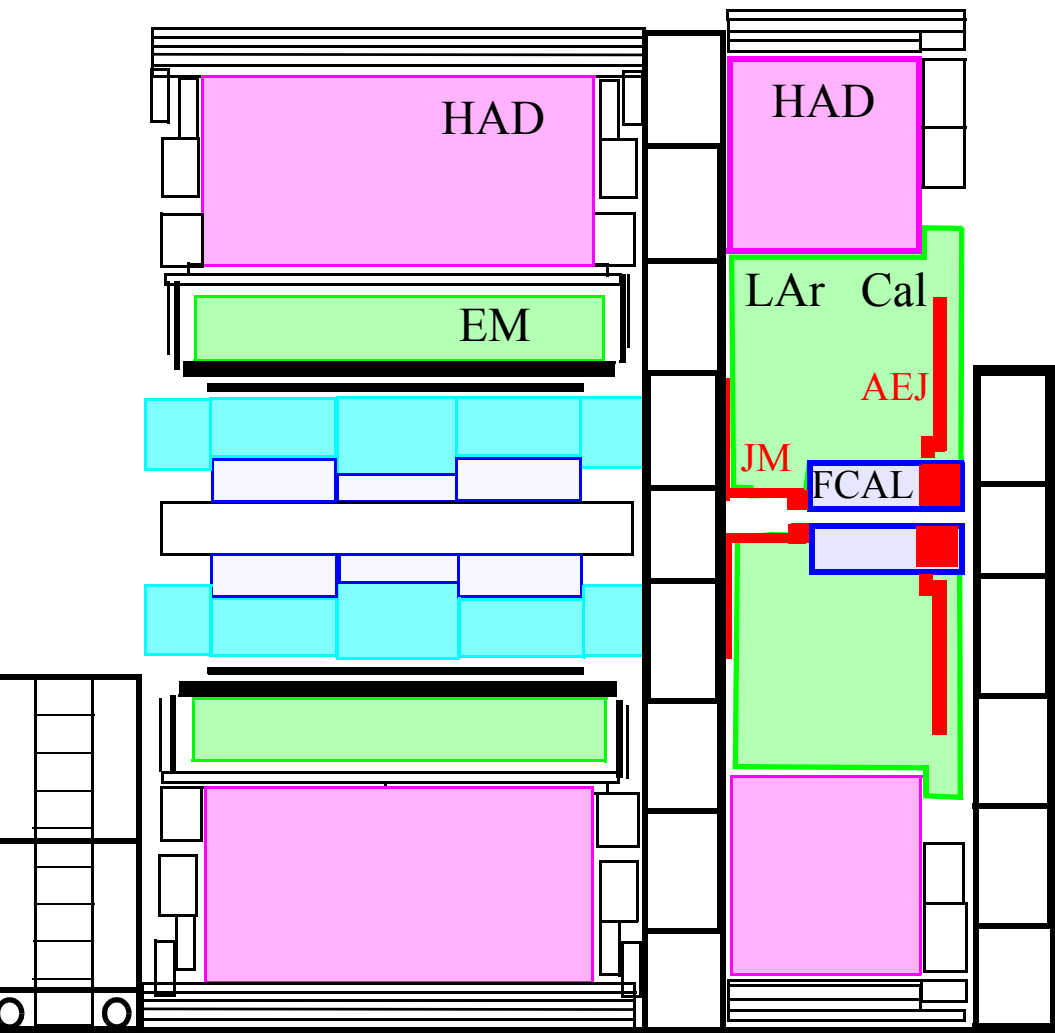
TGC 1

MDT

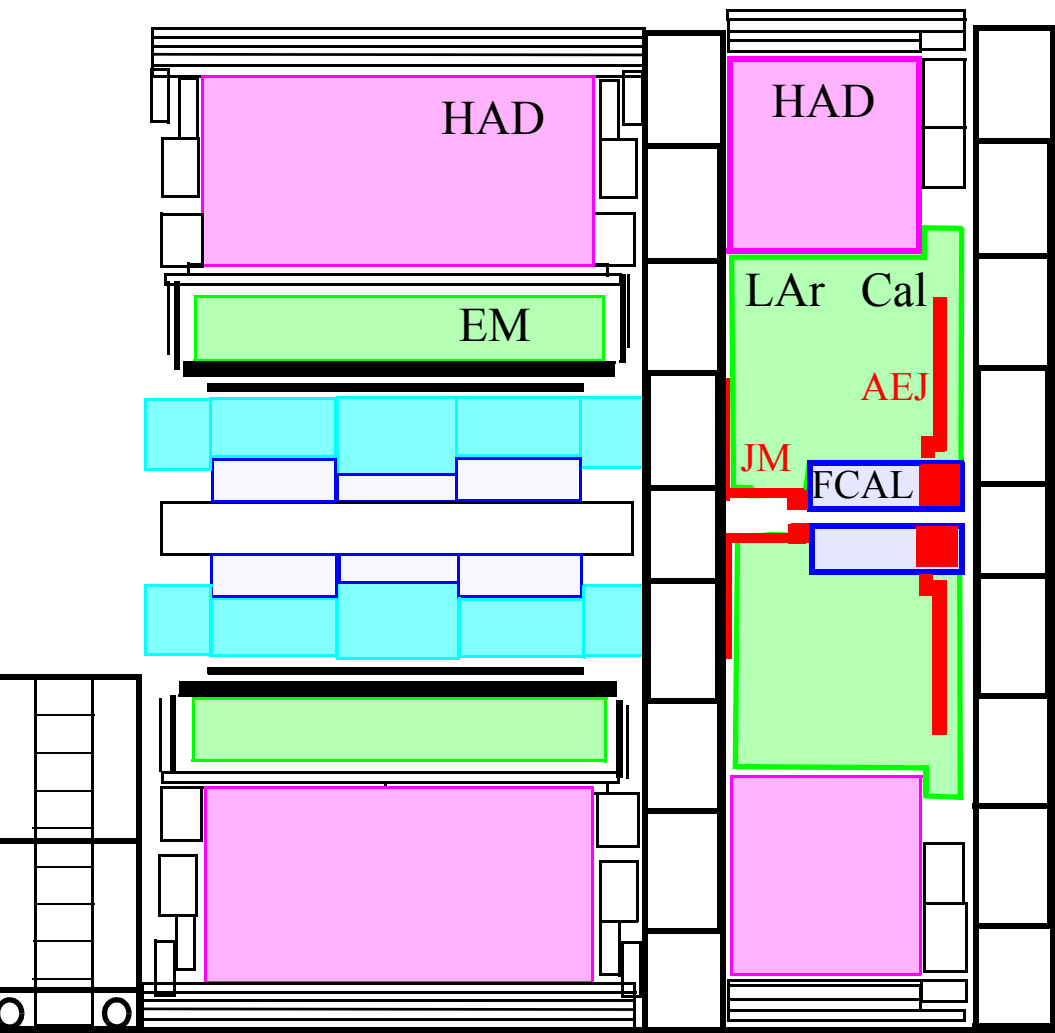


Build scaffolding



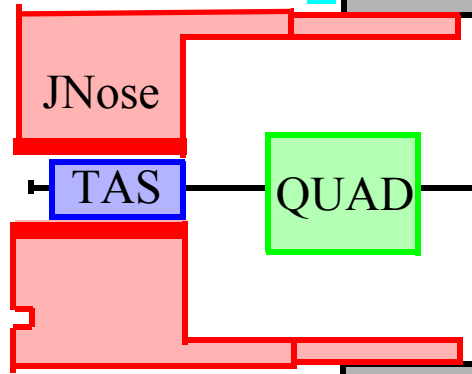


ACCESS
Rails

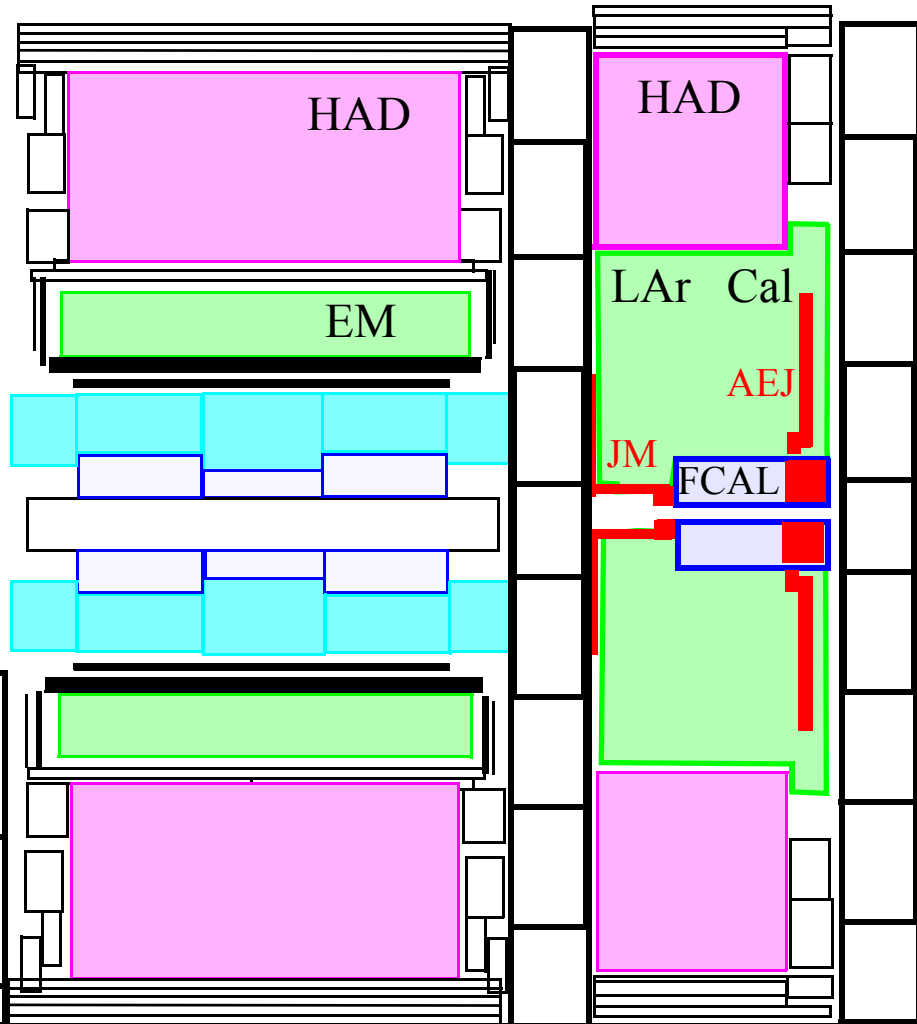
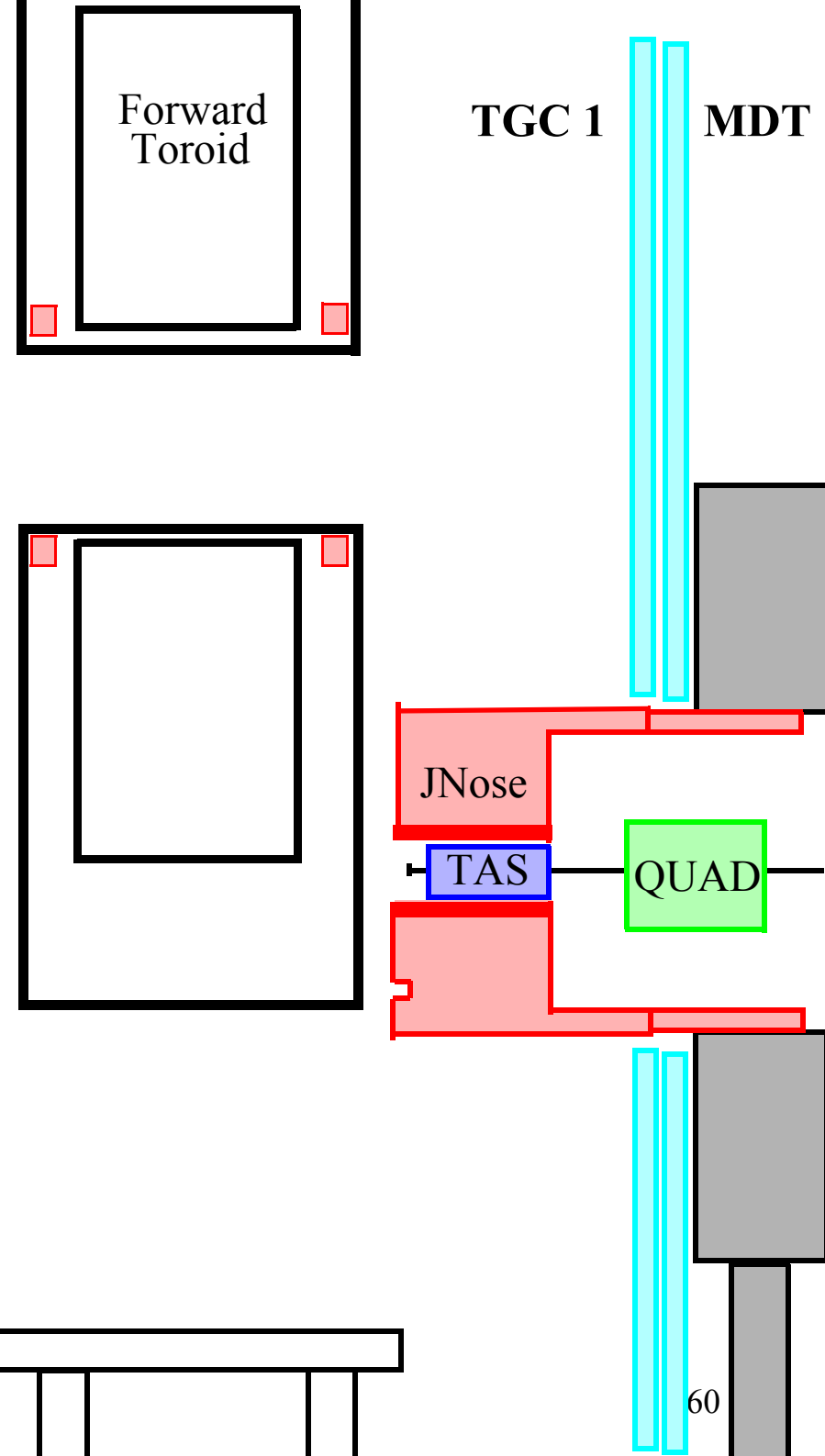


ACCESS RAILS

TGC 1 MDT

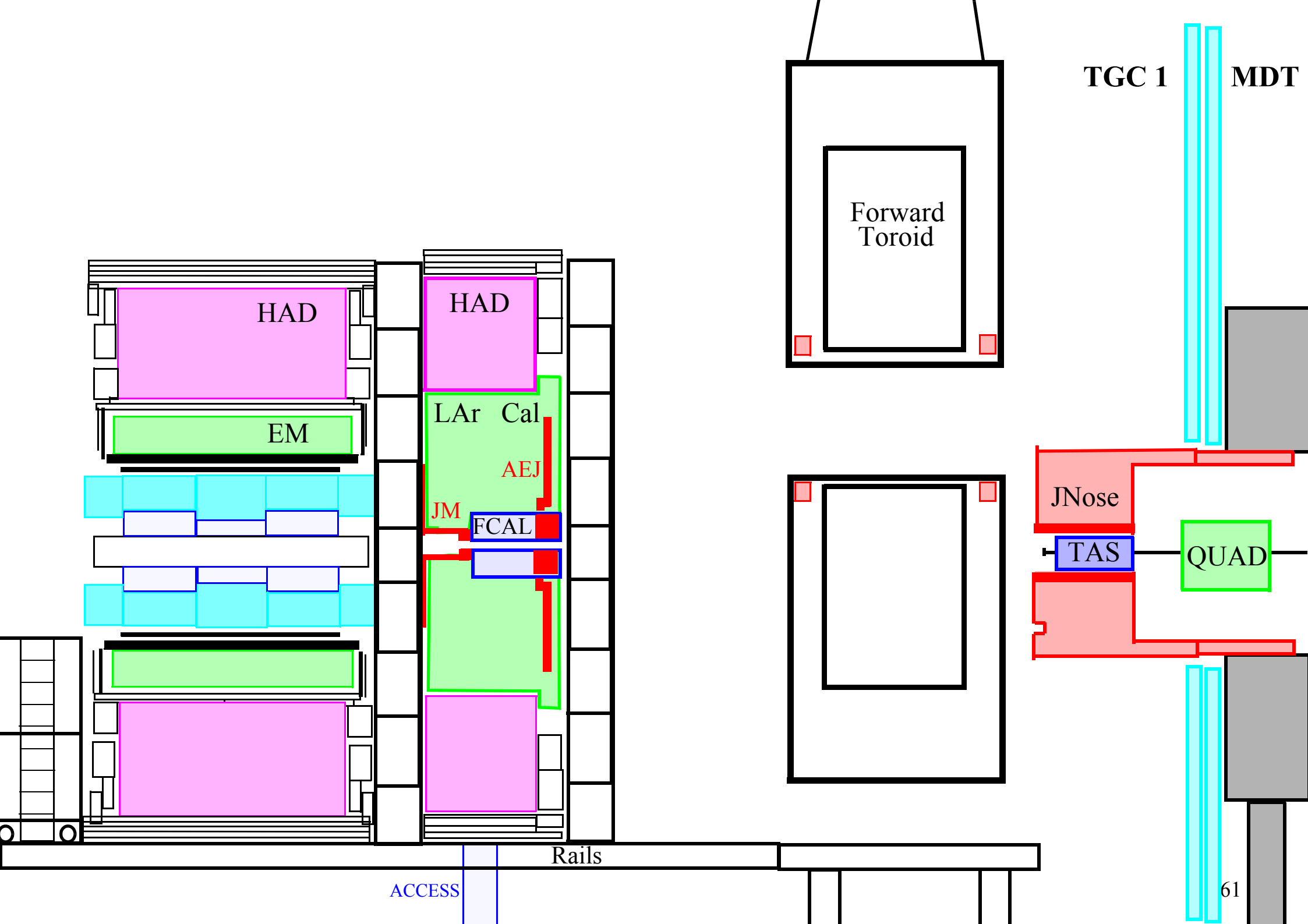


Install ECT



Rails

ACCESS



HAD

HAD

EM

LAr Cal

AEJ

JM

FCAL

Forward
Toroid

TGC 1

MDT

JNose

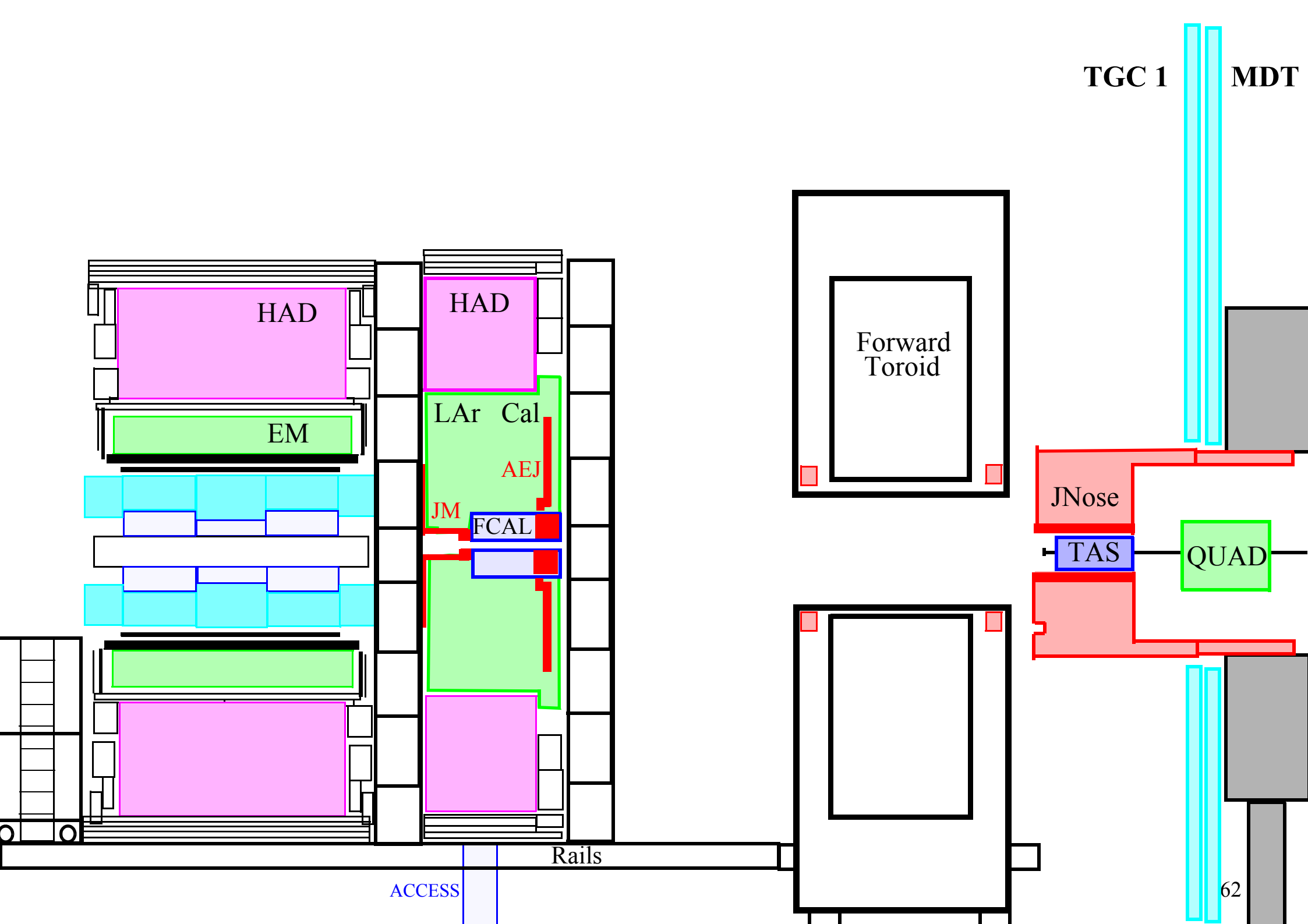
TAS

QUAD

Rails

ACCESS

61



TGC 1 MDT

Forward Toroid

HAD

HAD

EM

LAr Cal

AEJ

JM

FCAL

JNose

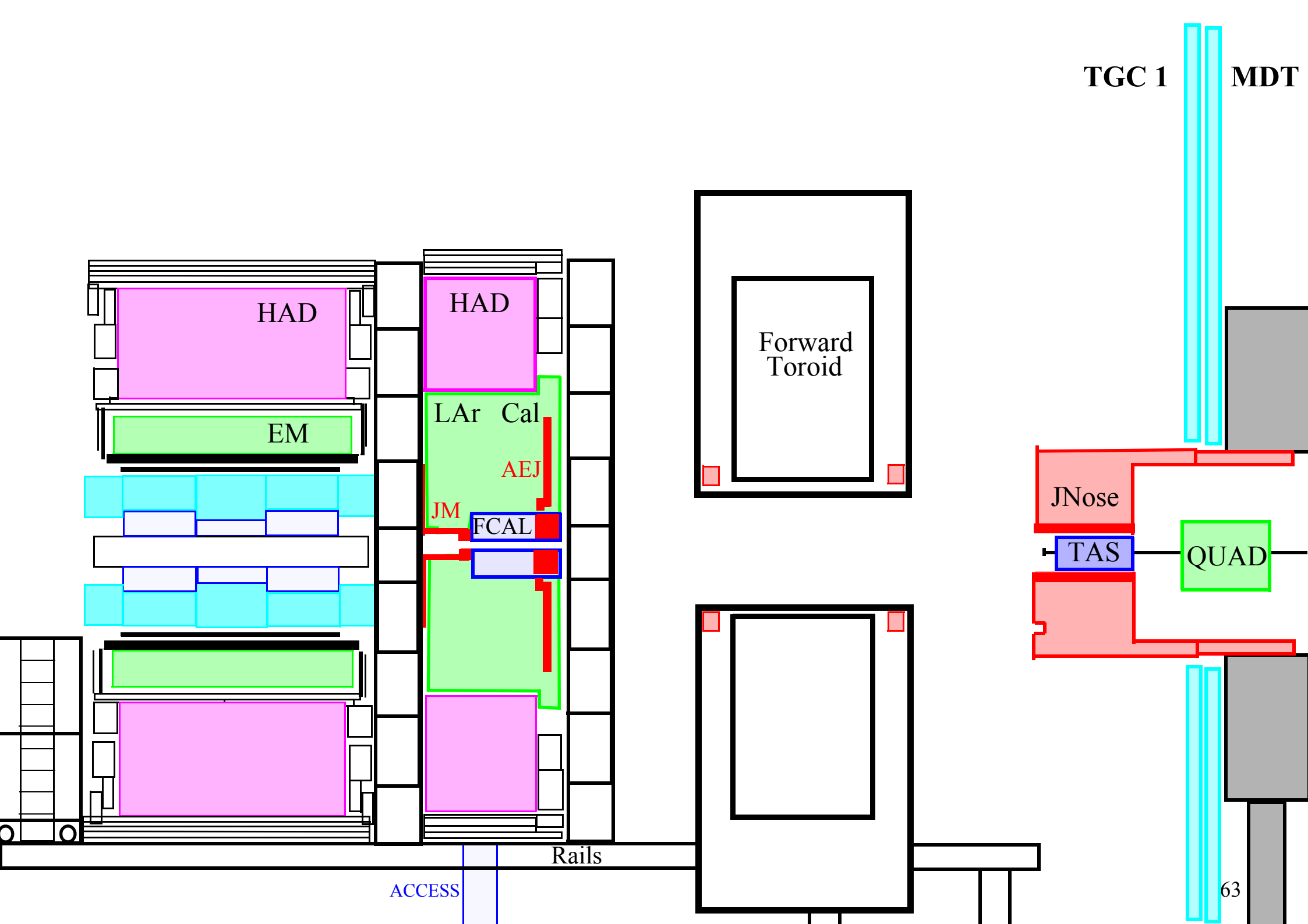
TAS

QUAD

Rails

ACCESS

62



HAD

HAD

EM

LAr Cal

AEJ

JM

FCAL

Forward
Toroid

JNose

TAS

QUAD

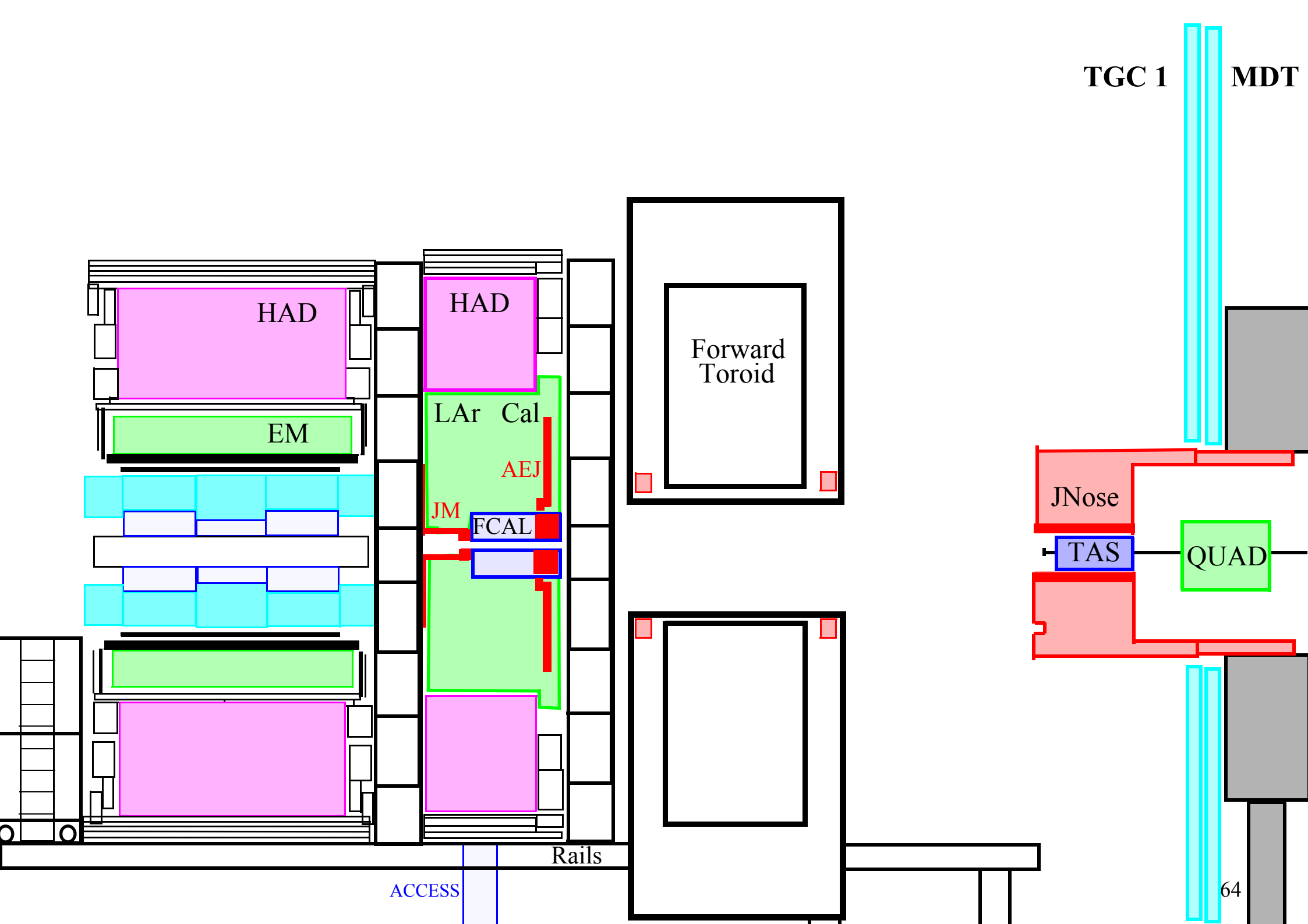
TGC 1

MDT

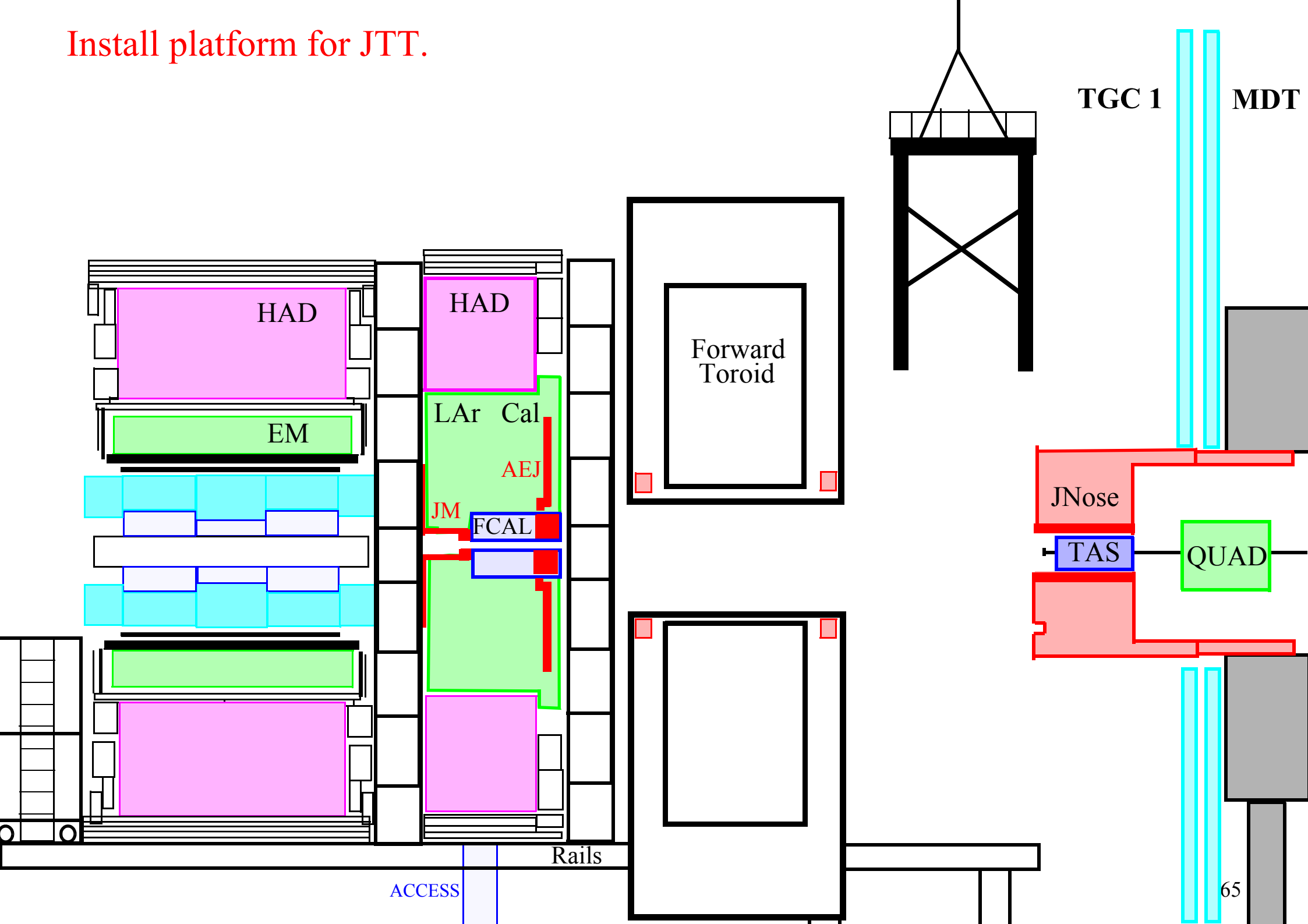
ACCESS

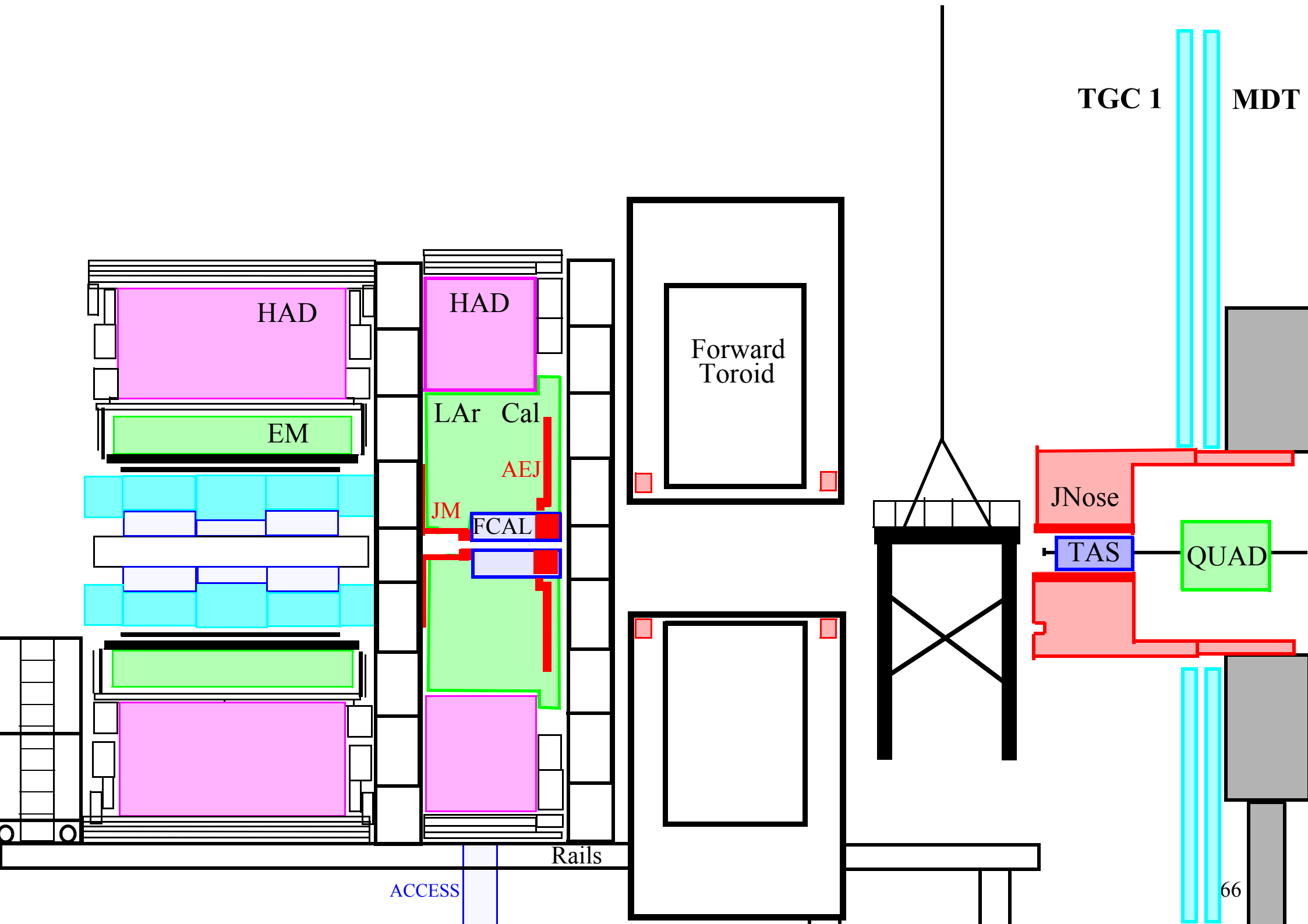
Rails

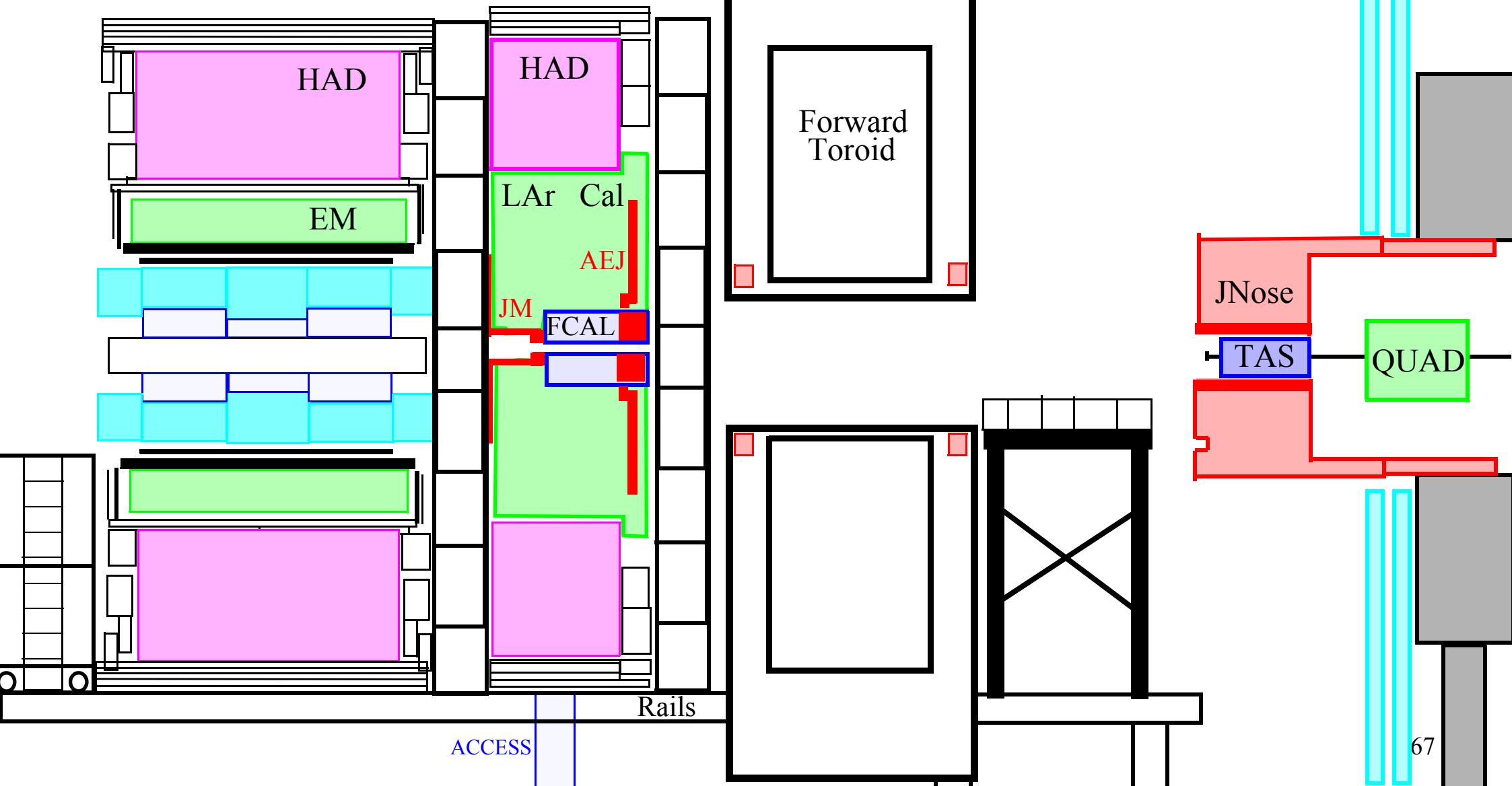
63



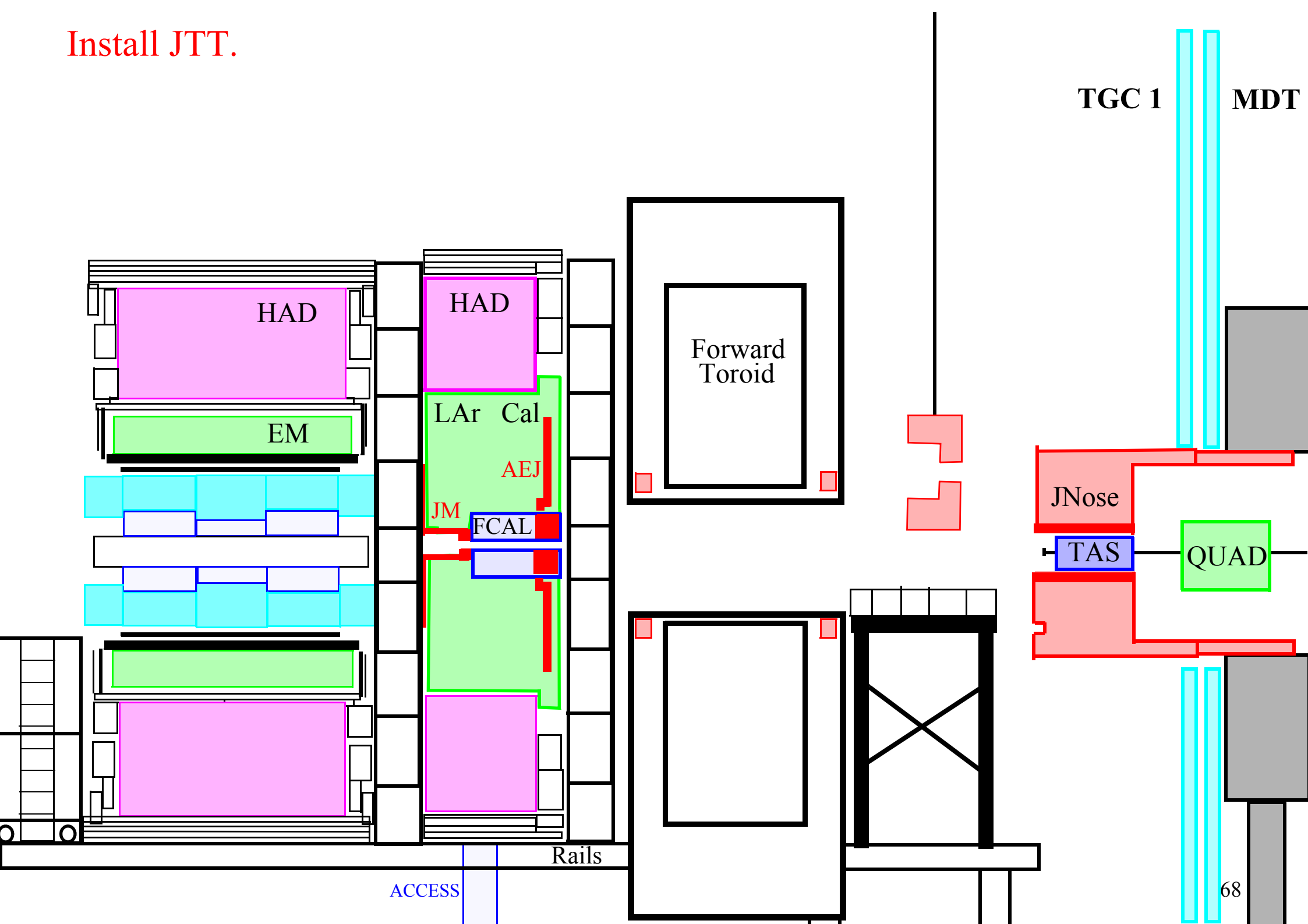
Install platform for JTT.







Install JTT.



TGC 1 MDT

Forward Toroid

HAD

HAD

EM

LAr Cal

AEJ

JM

FCAL

JNose

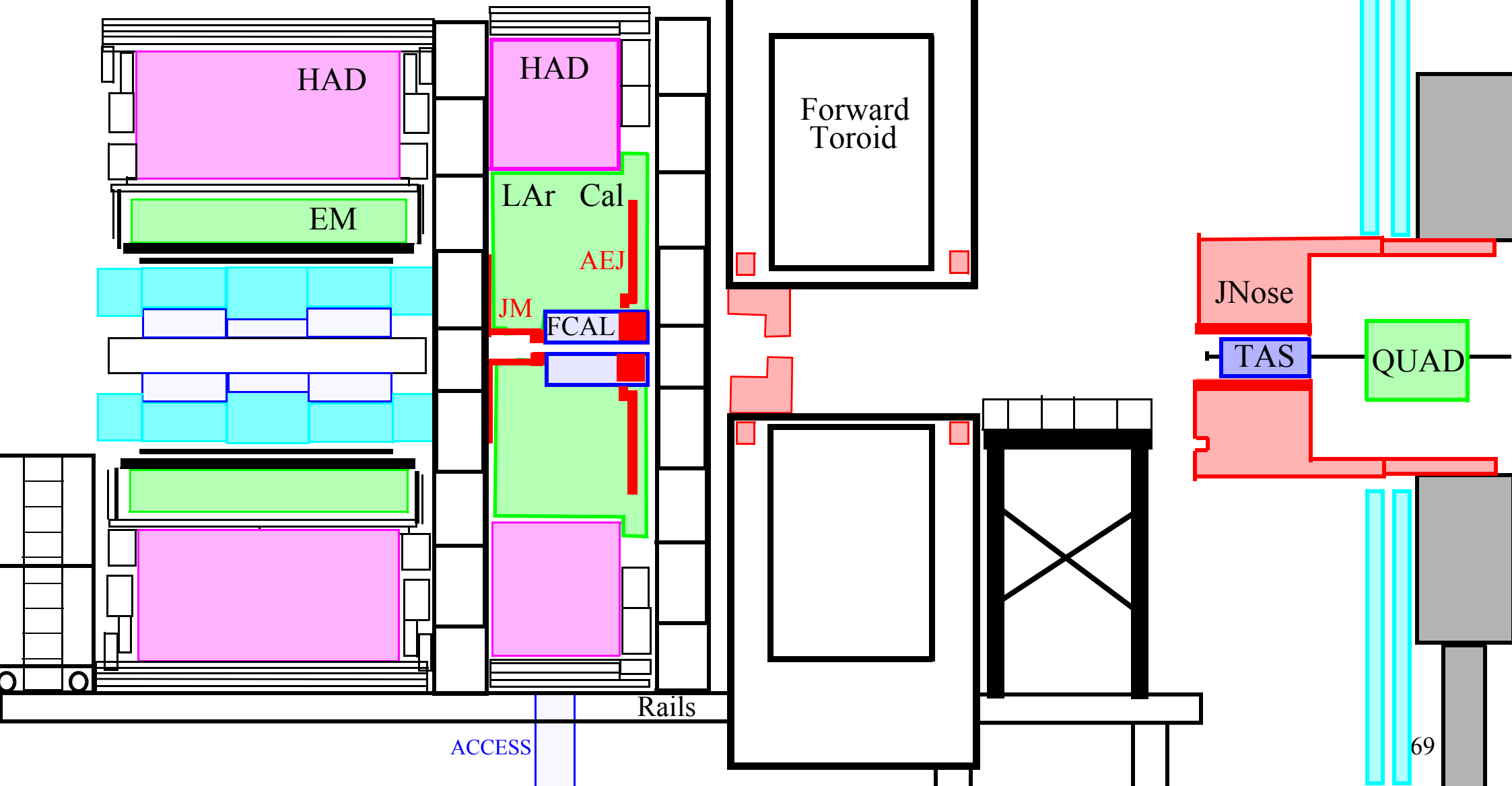
TAS

QUAD

Rails

ACCESS

68



TGC 1

MDT

HAD

HAD

Forward
Toroid

EM

LAr Cal

AEJ

JM

FCAL

JNose

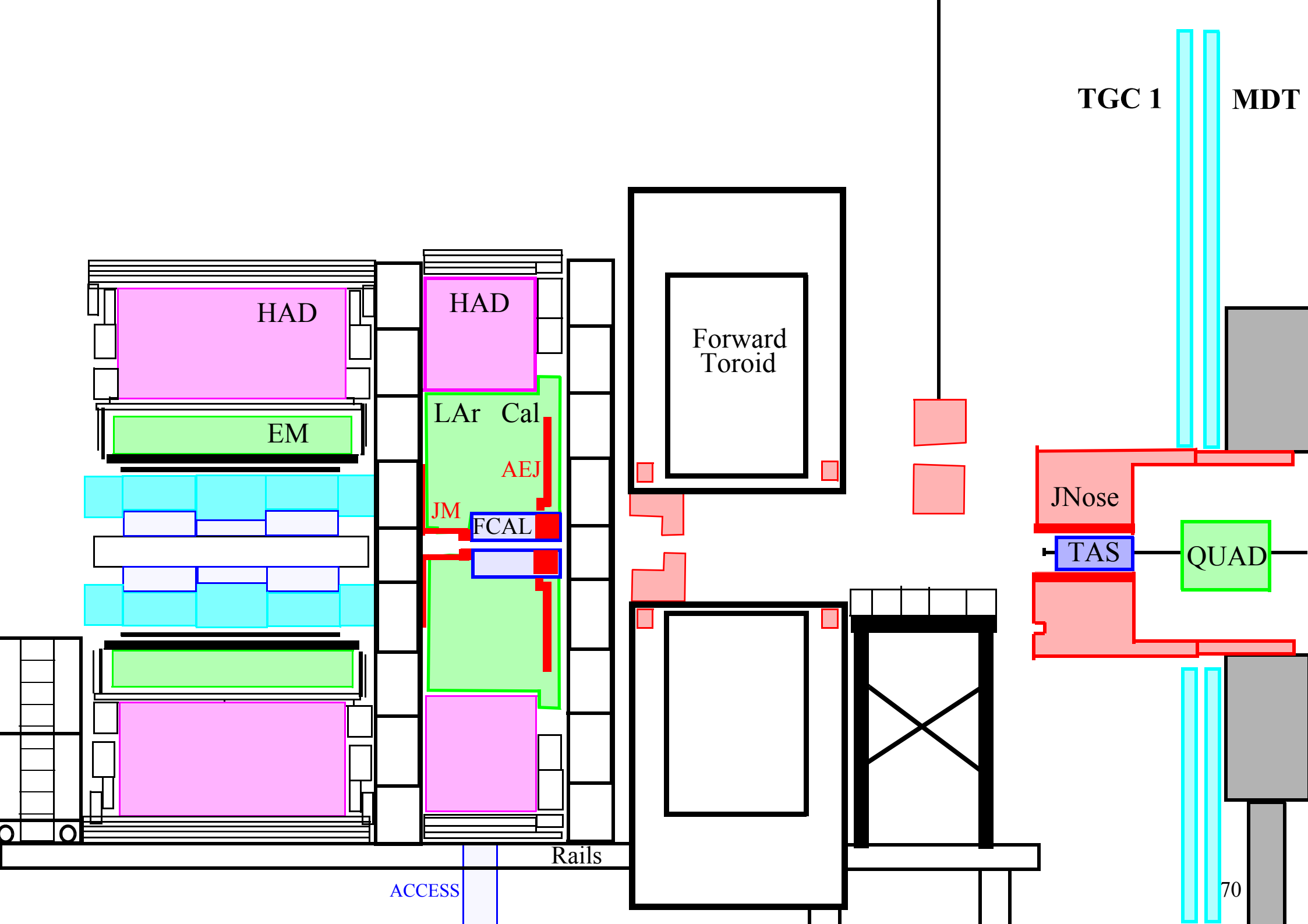
TAS

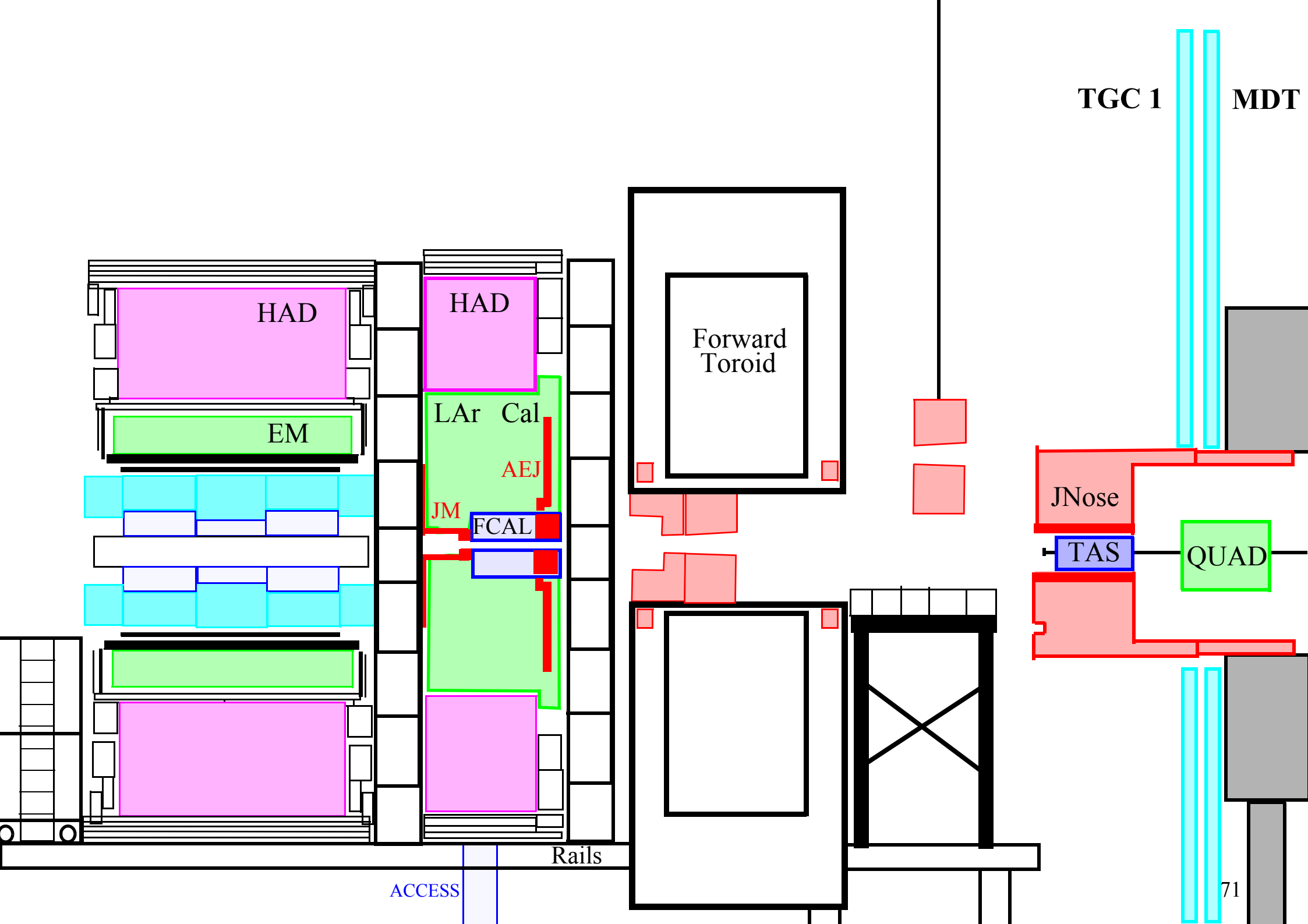
QUAD

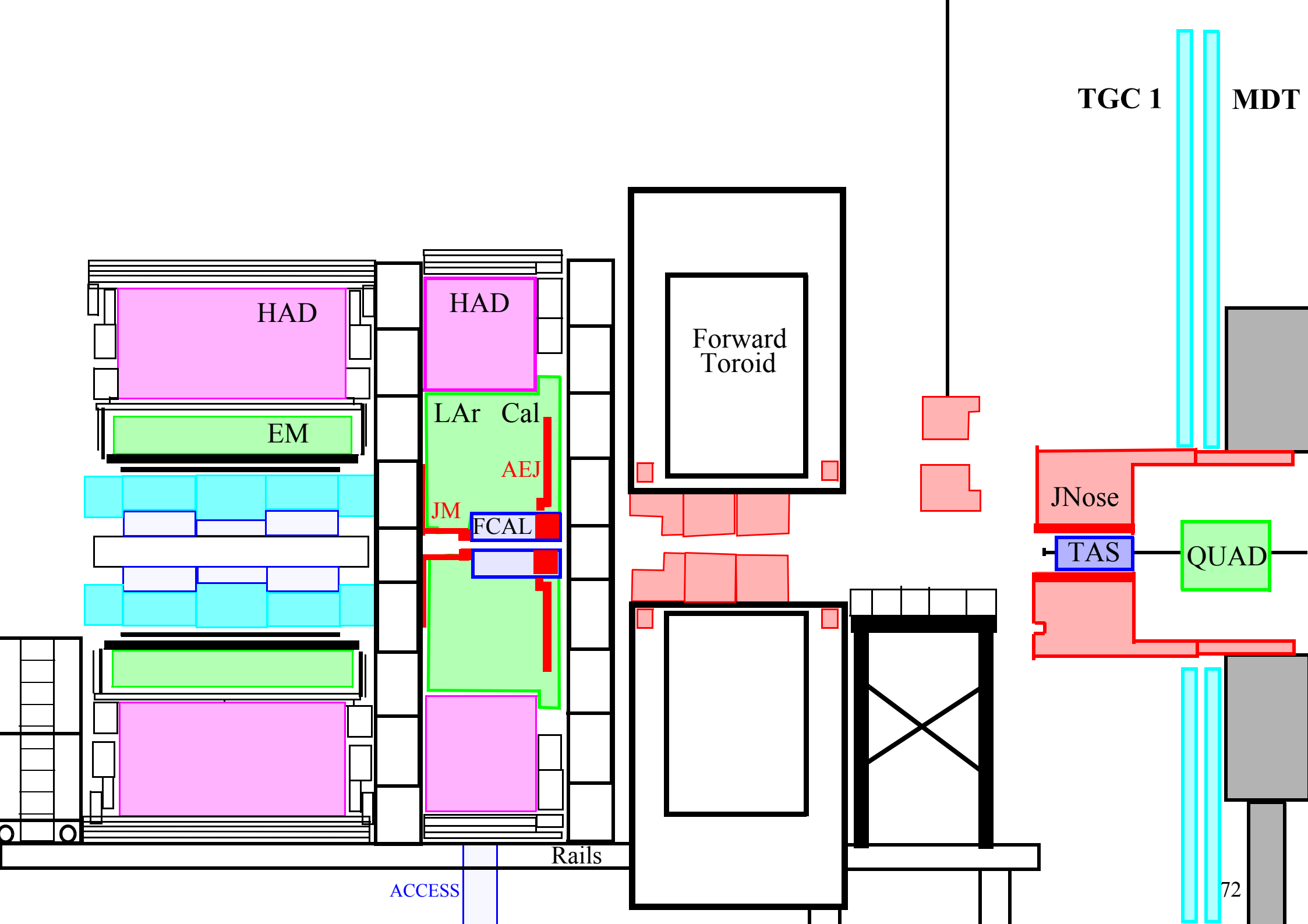
Rails

ACCESS

69







TGC 1

MDT

HAD

HAD

Forward
Toroid

EM

LAr Cal

AEJ

JM

FCAL

JNose

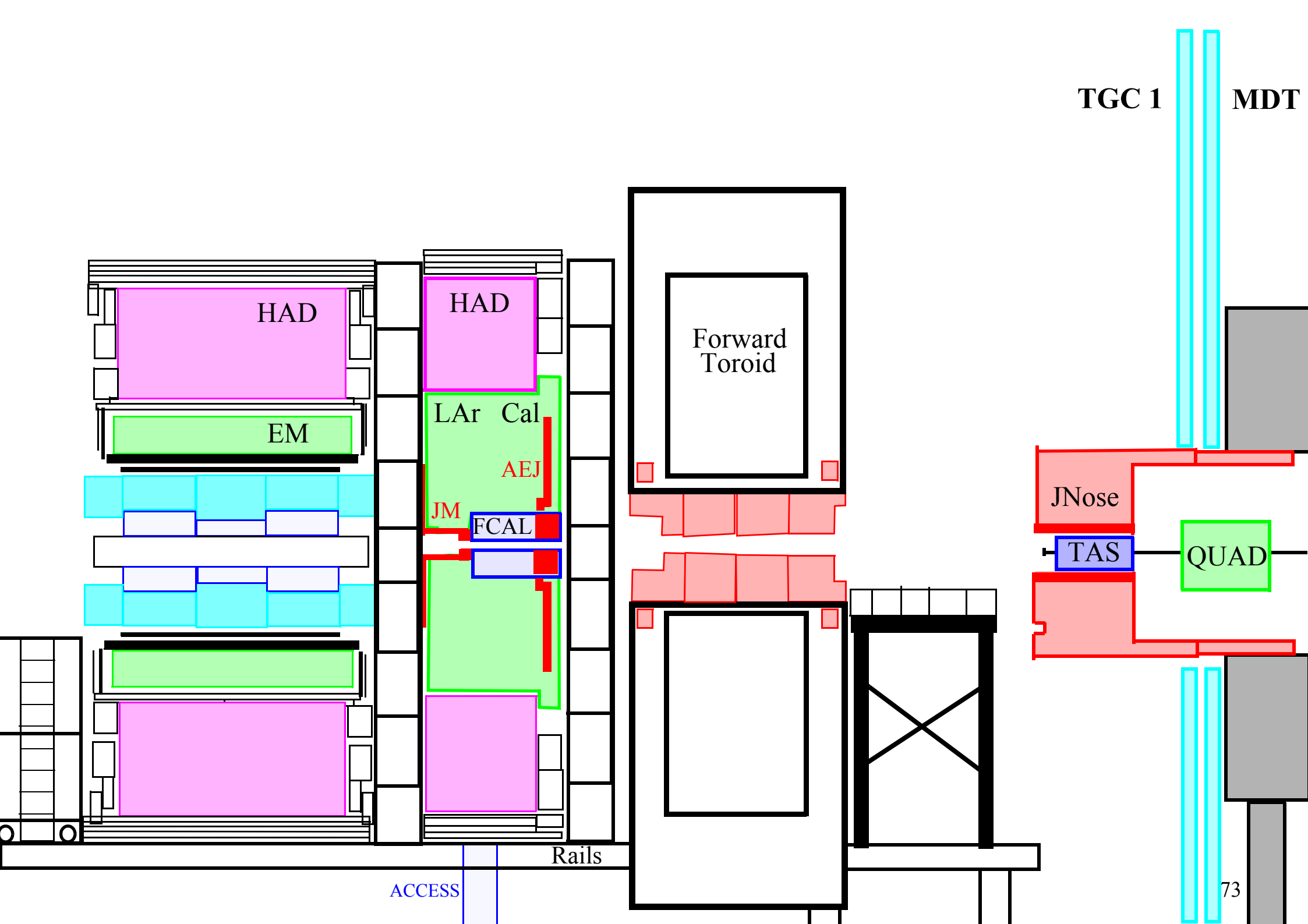
TAS

QUAD

Rails

ACCESS

72



TGC 1

MDT

HAD

HAD

Forward
Toroid

EM

LAr Cal

AEJ

JM

FCAL

JNose

TAS

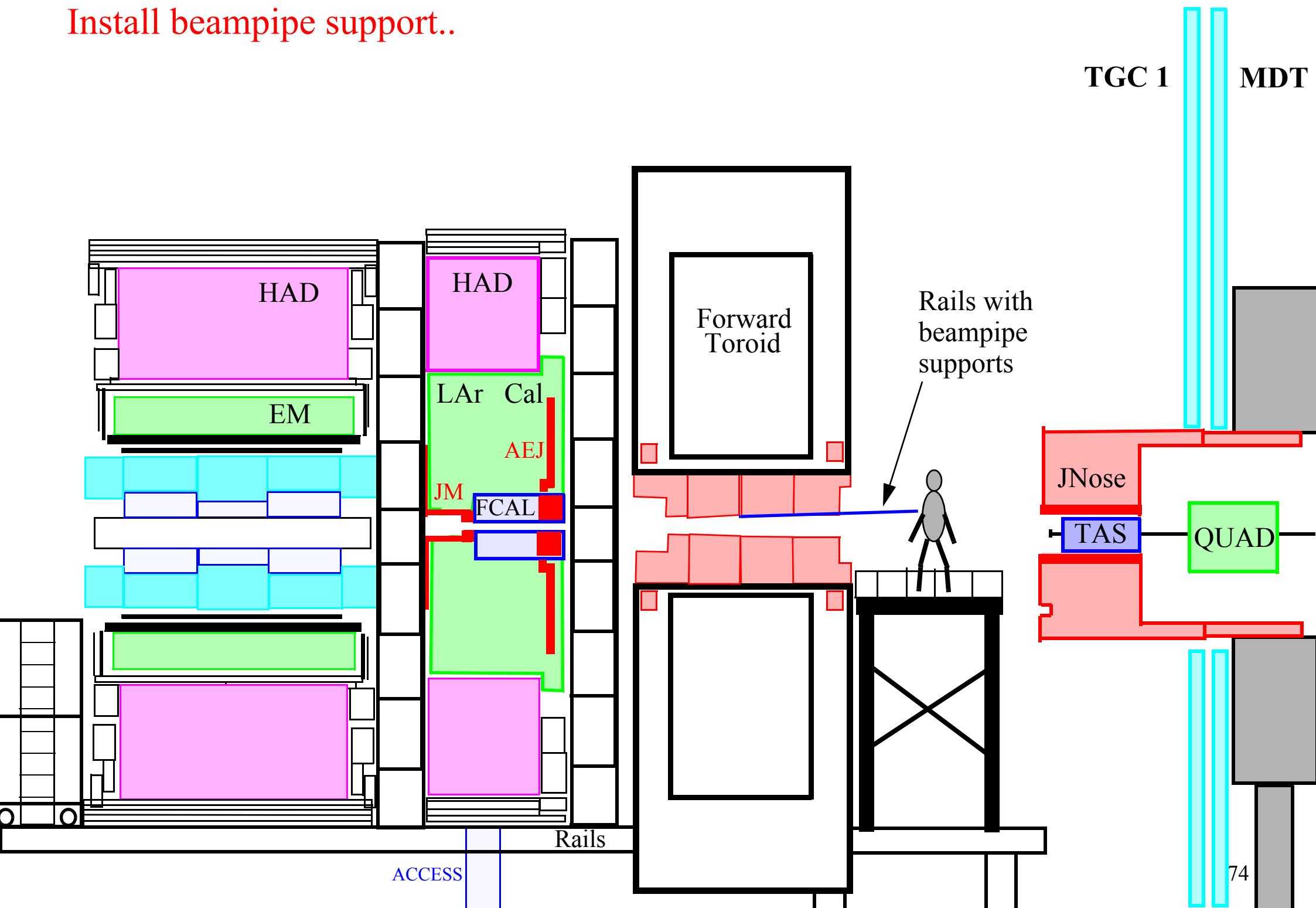
QUAD

Rails

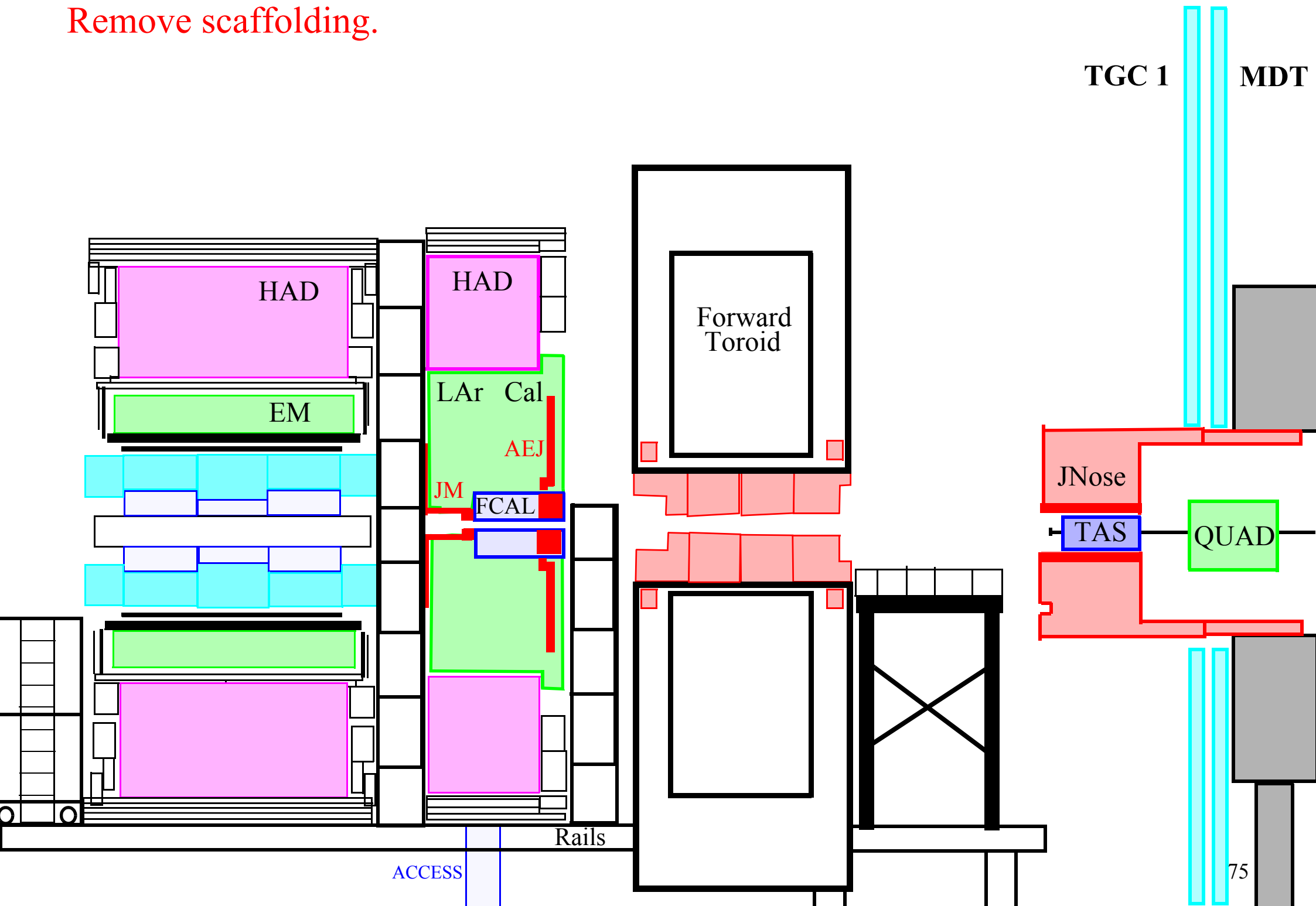
ACCESS

73

Install beampipe support..



Remove scaffolding.



TGC 1 MDT

HAD

HAD

Forward
Toroid

EM

LAr Cal

AEJ

JM

FCAL

JNose

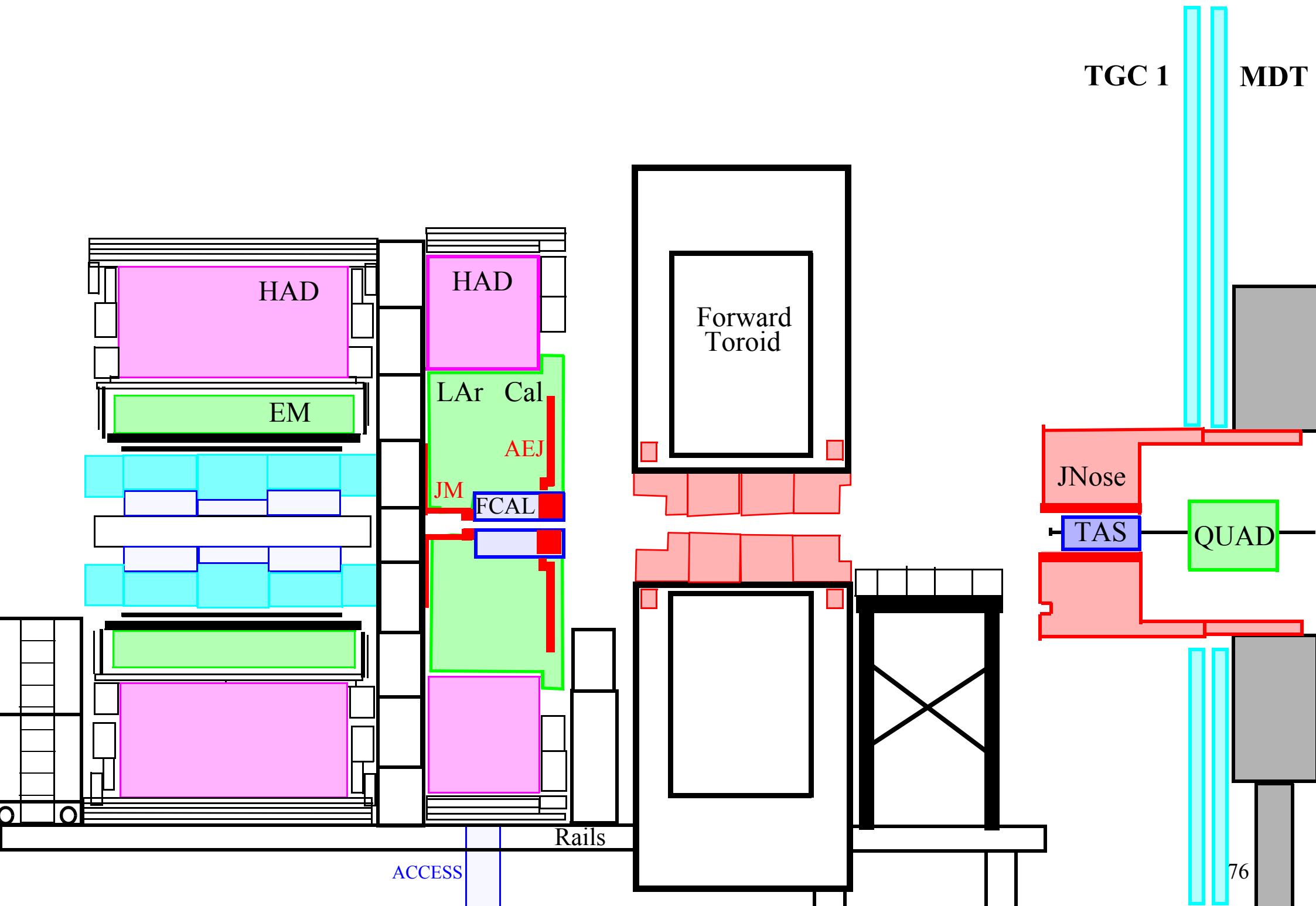
TAS

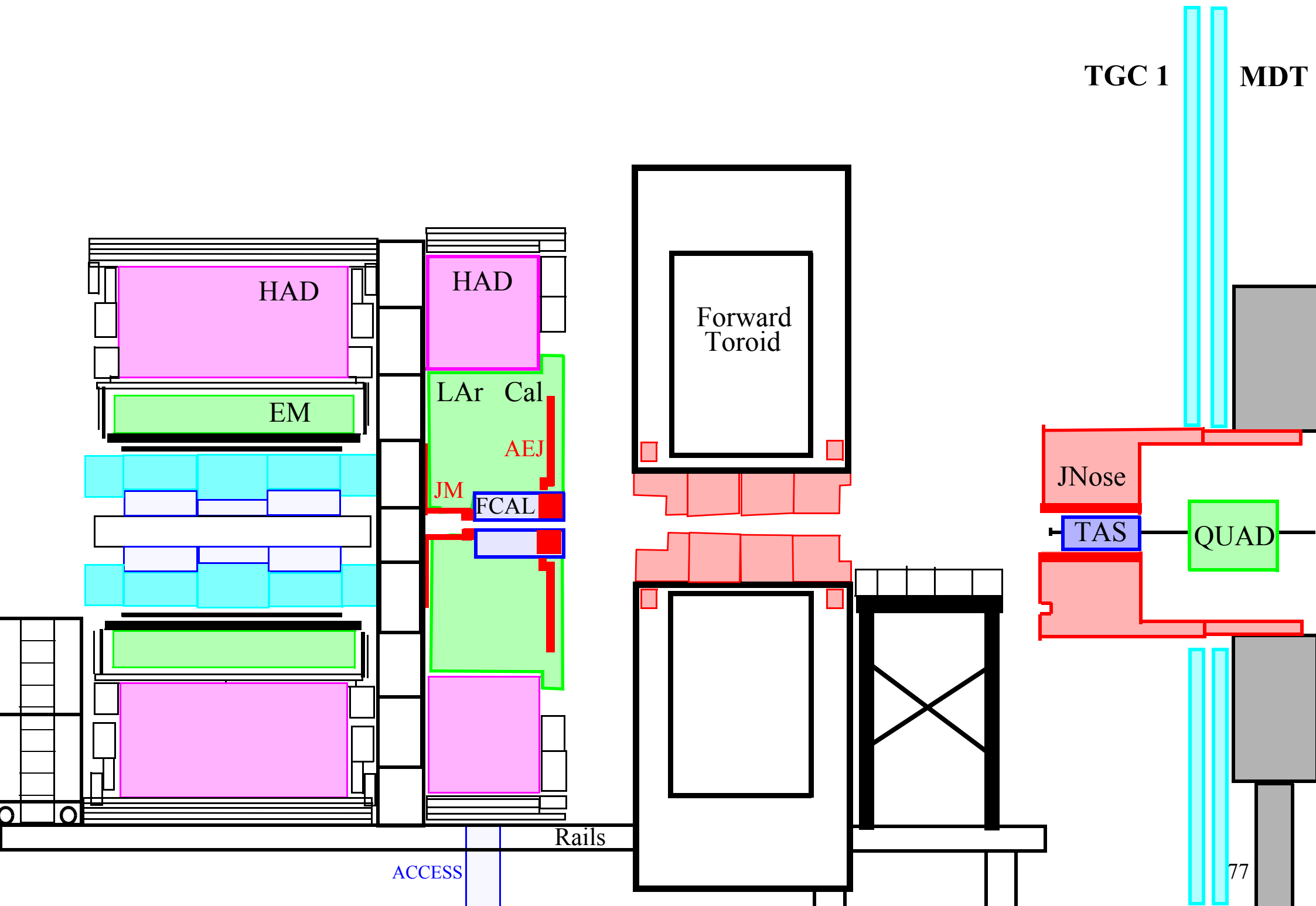
QUAD

RAILS

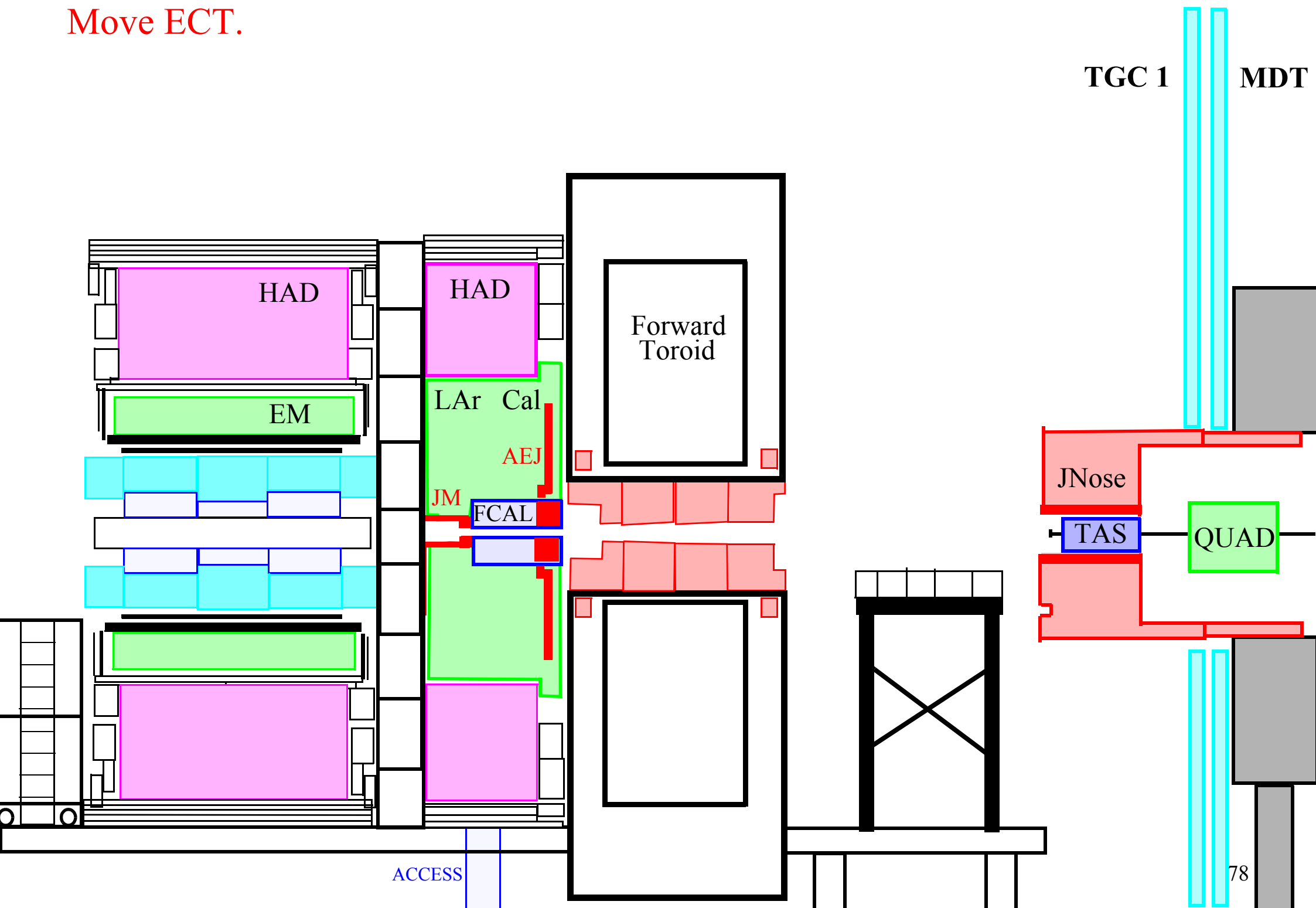
ACCESS

75





Move ECT.



TGC 1

MDT

HAD

EM

HAD

LAr Cal

AEJ

JM

FCAL

Forward
Toroid

JNose

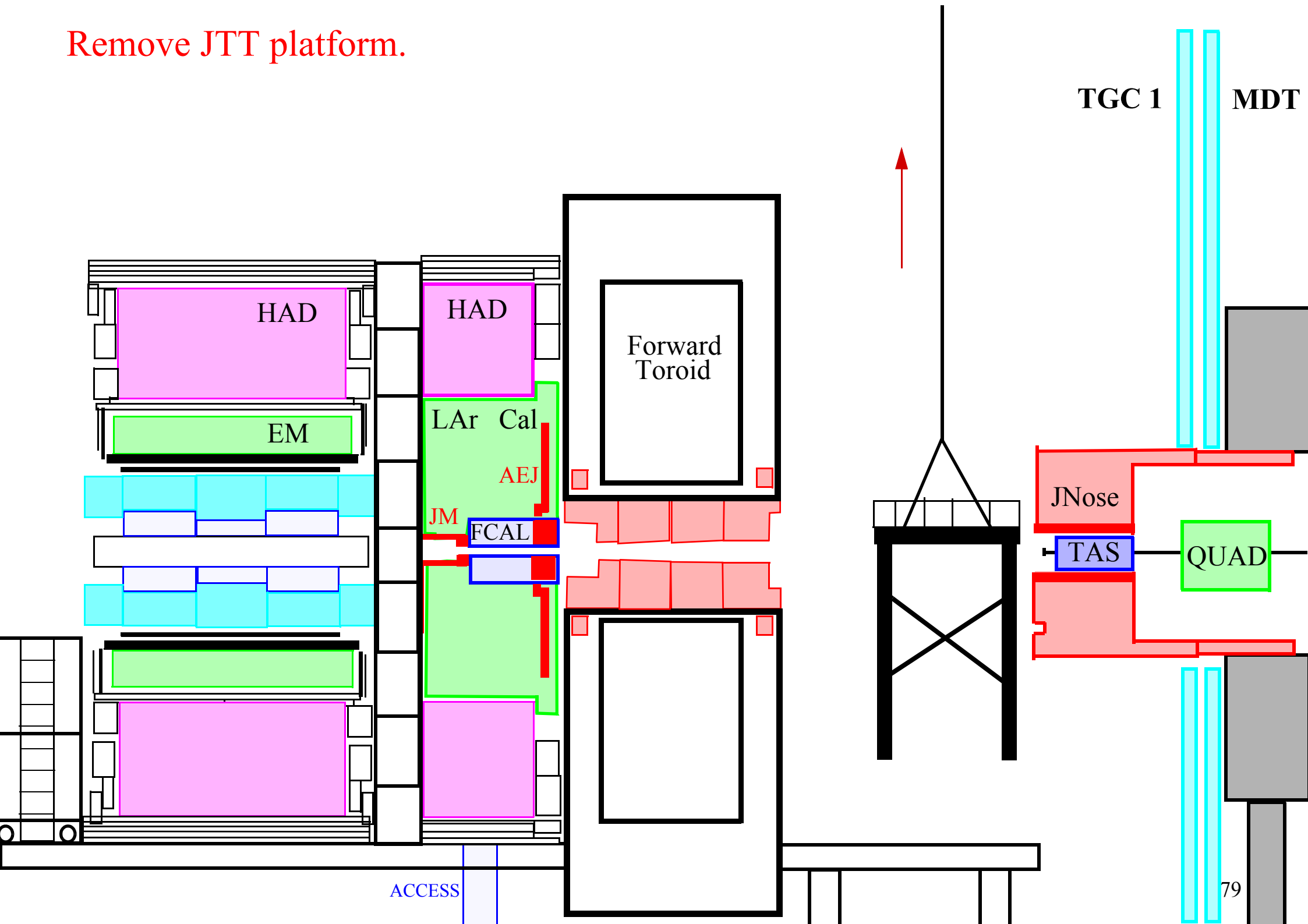
TAS

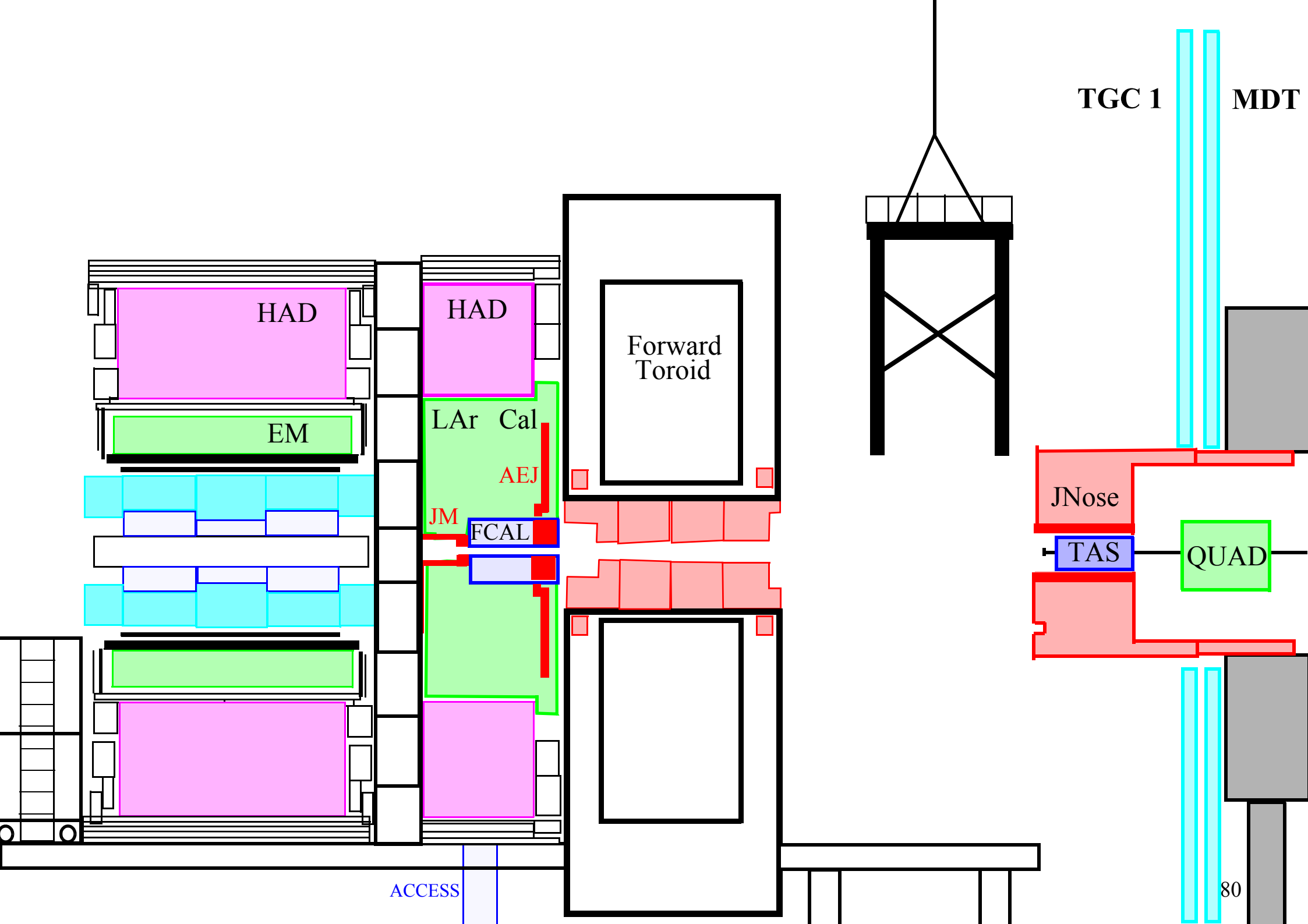
QUAD

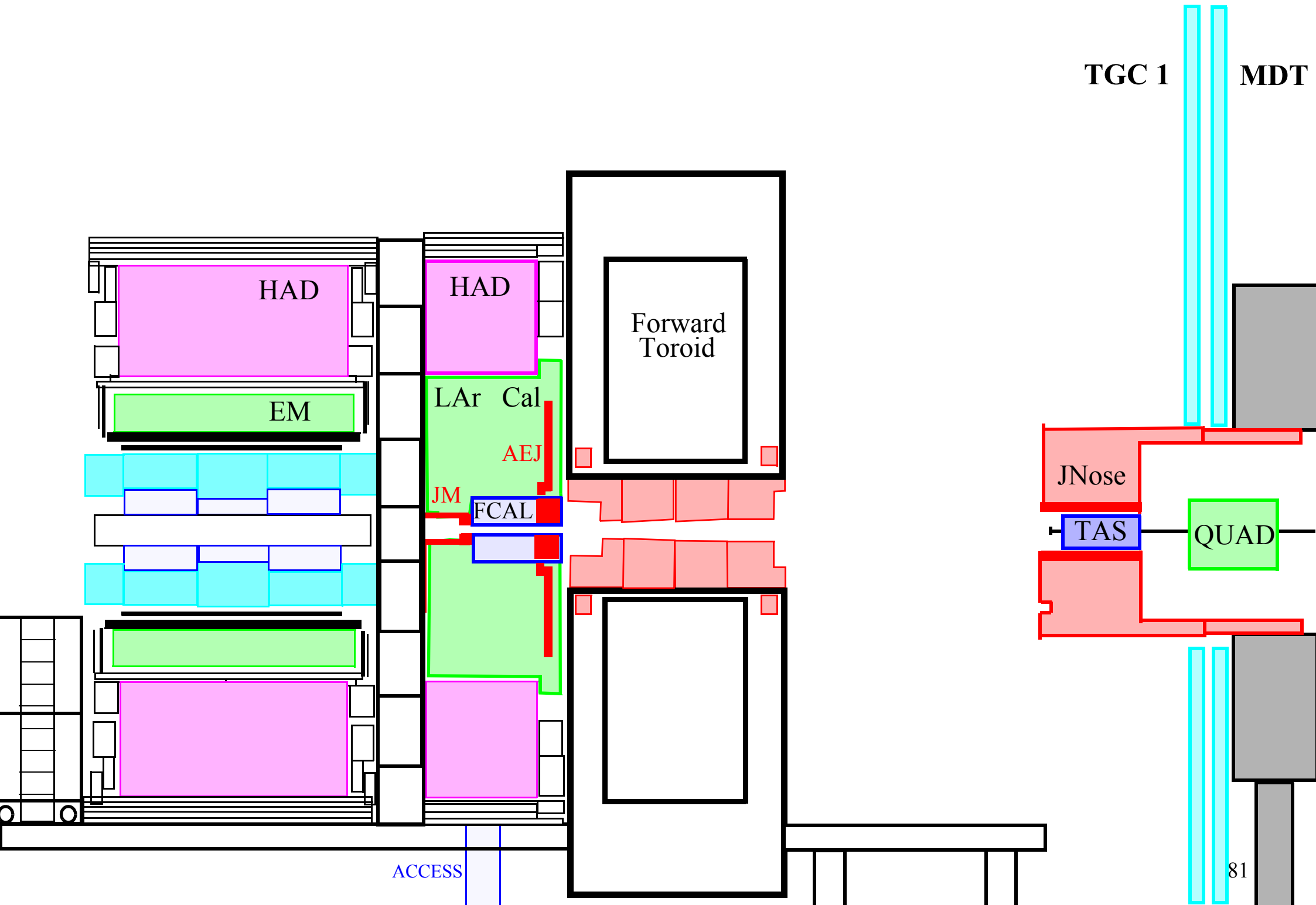
ACCESS

78

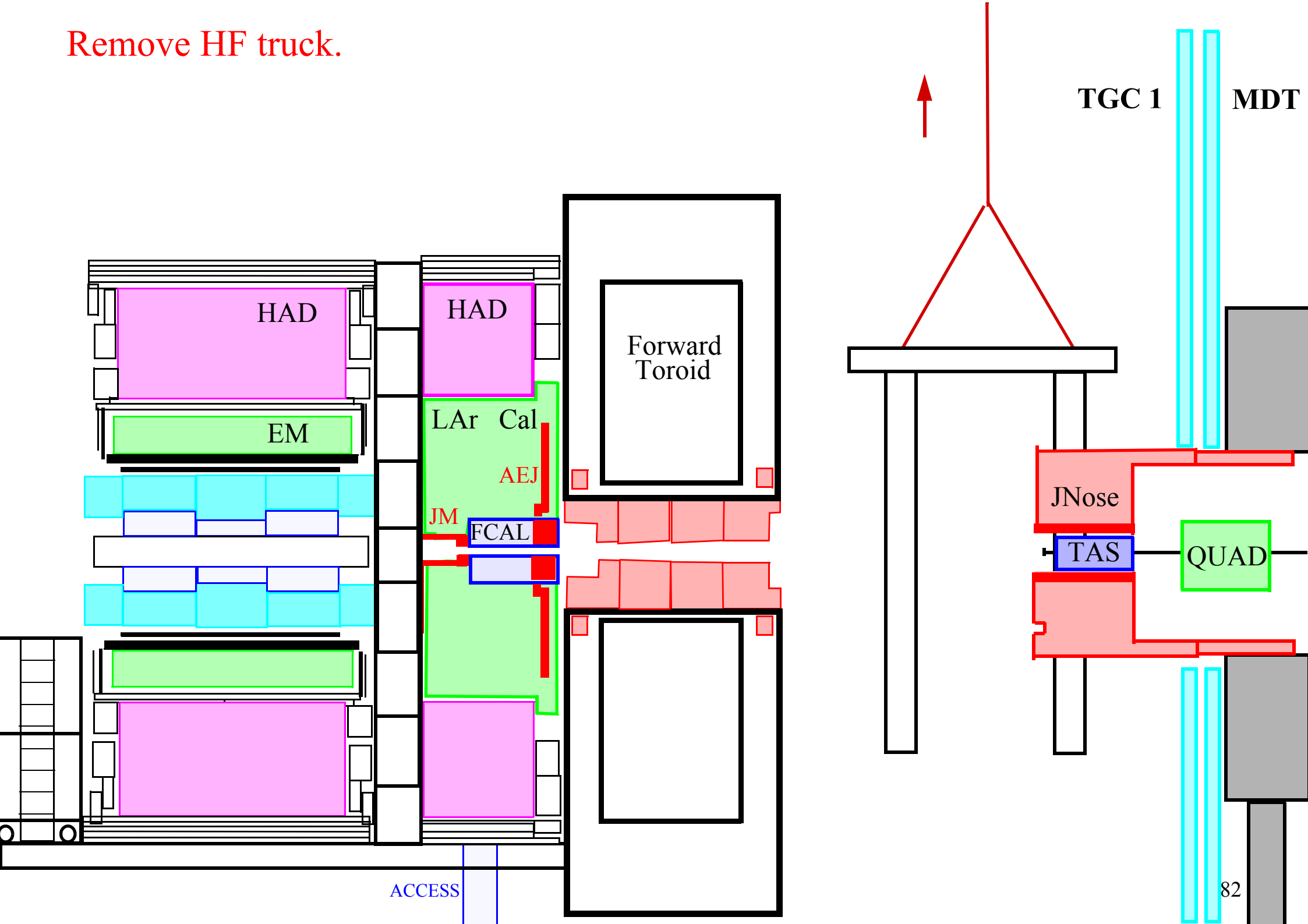
Remove JTT platform.

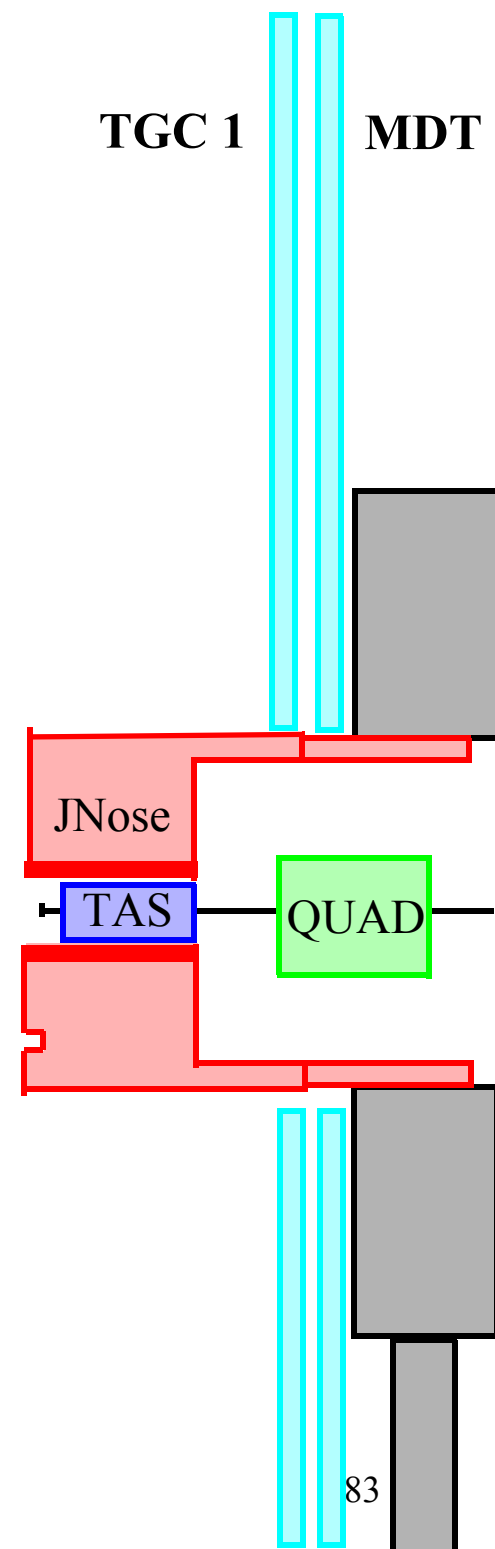
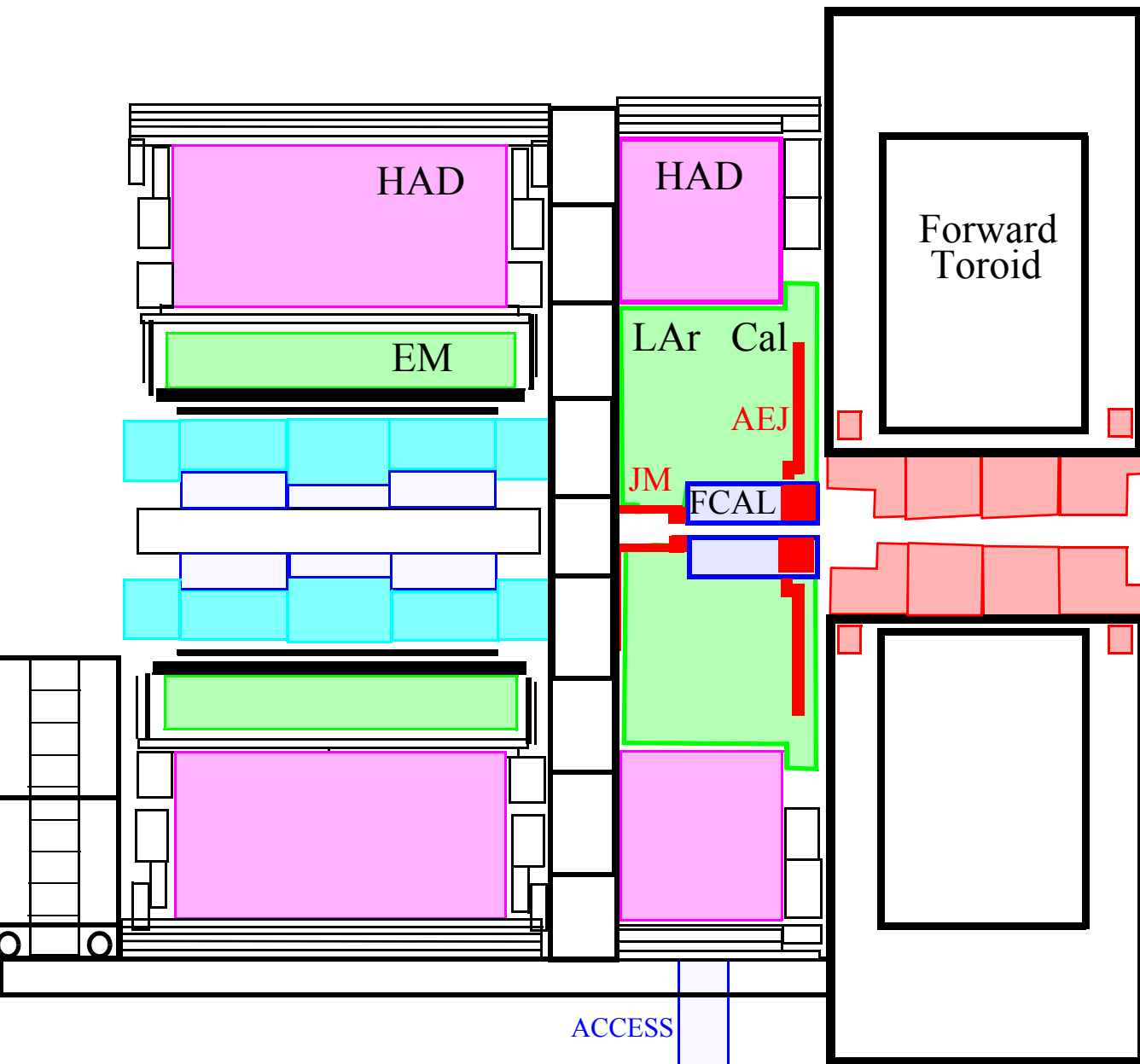




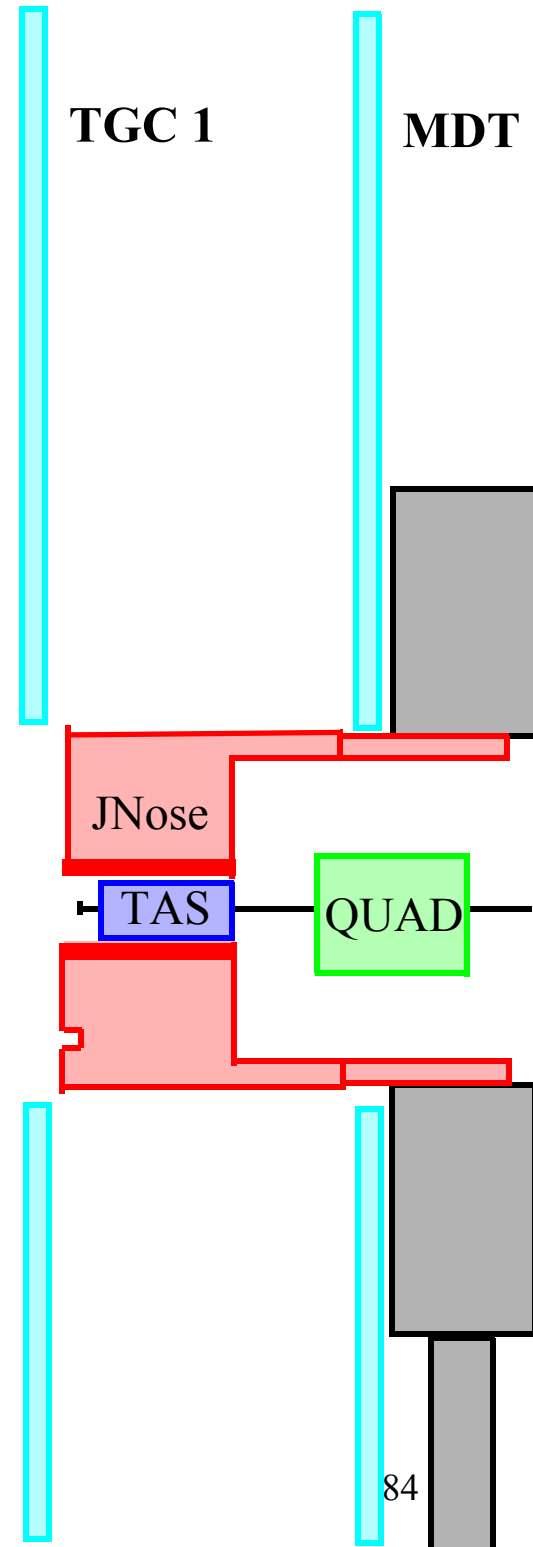
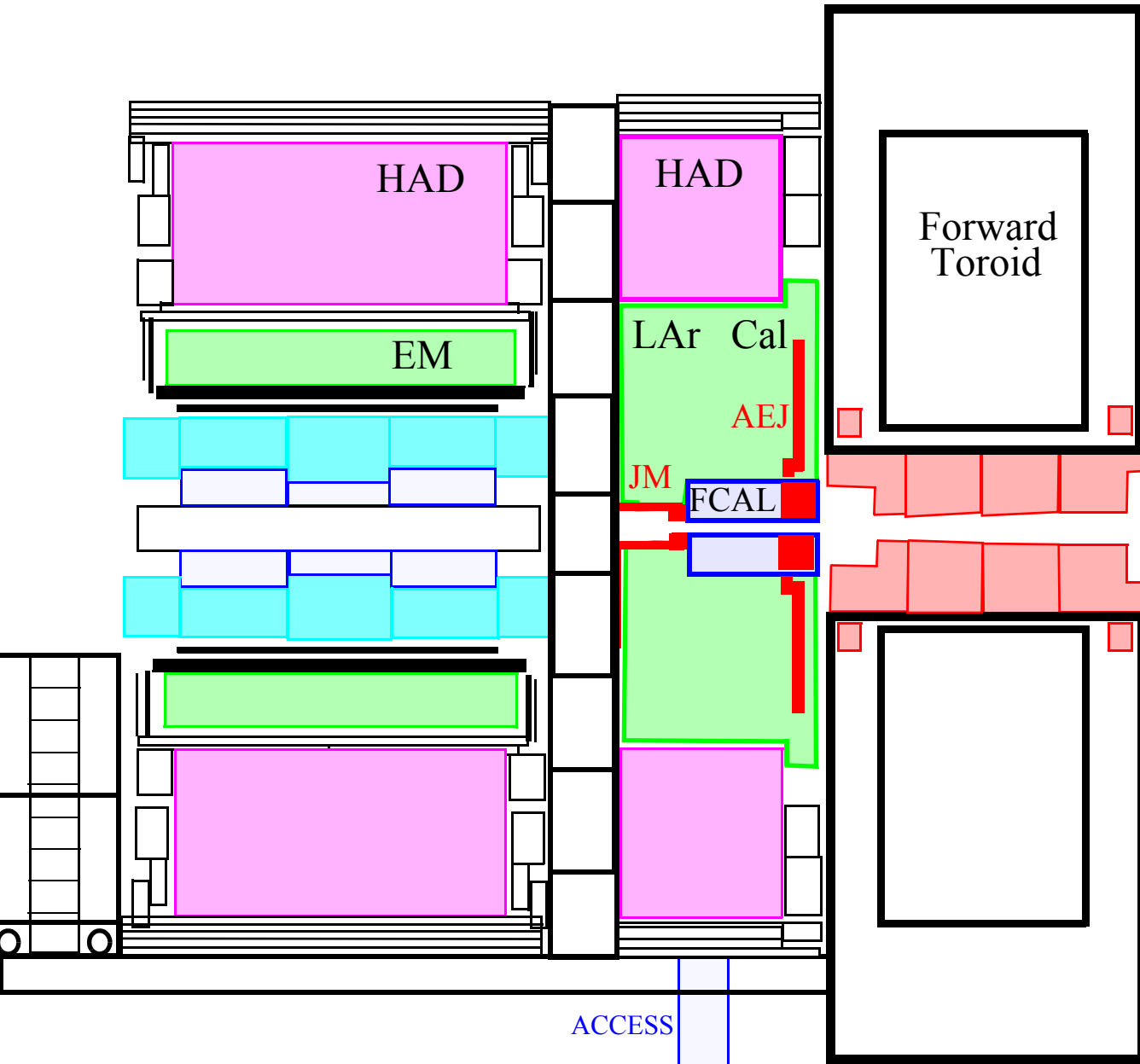


Remove HF truck.



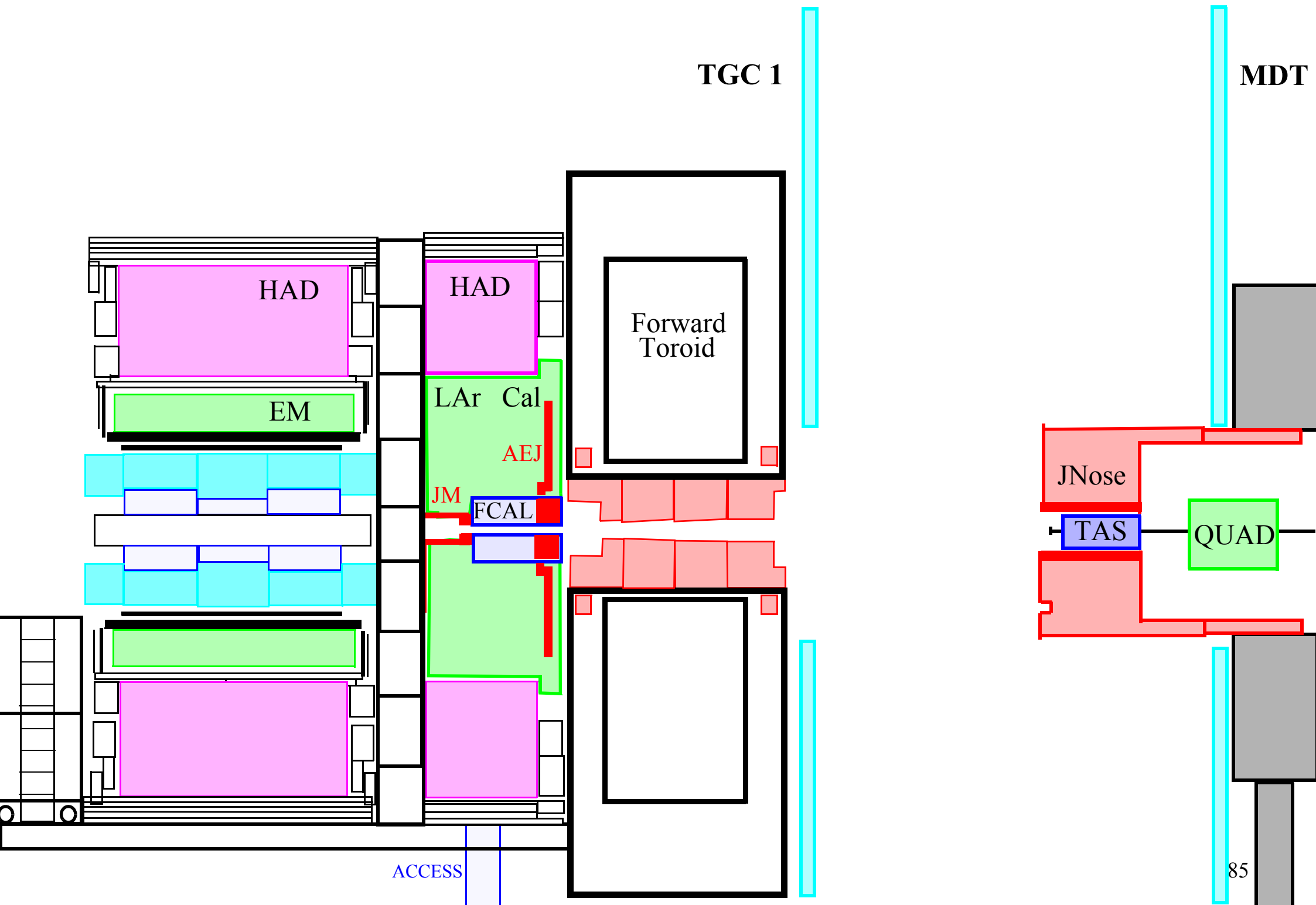


Move TGC1.



TGC 1

MDT



HAD

HAD

Forward
Toroid

EM

LAr Cal

AEJ

JM

FCAL

JNose

TAS

QUAD

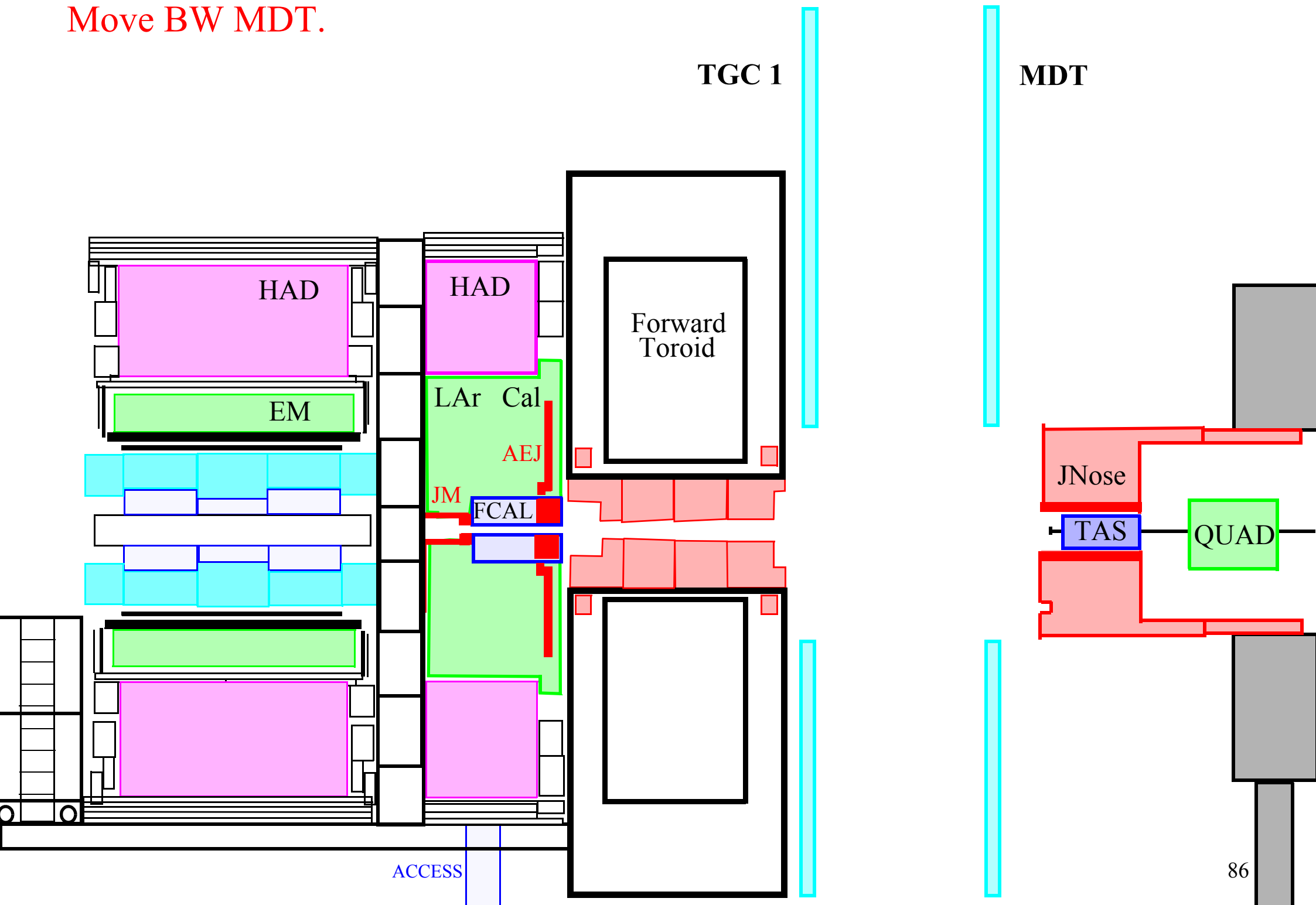
ACCESS

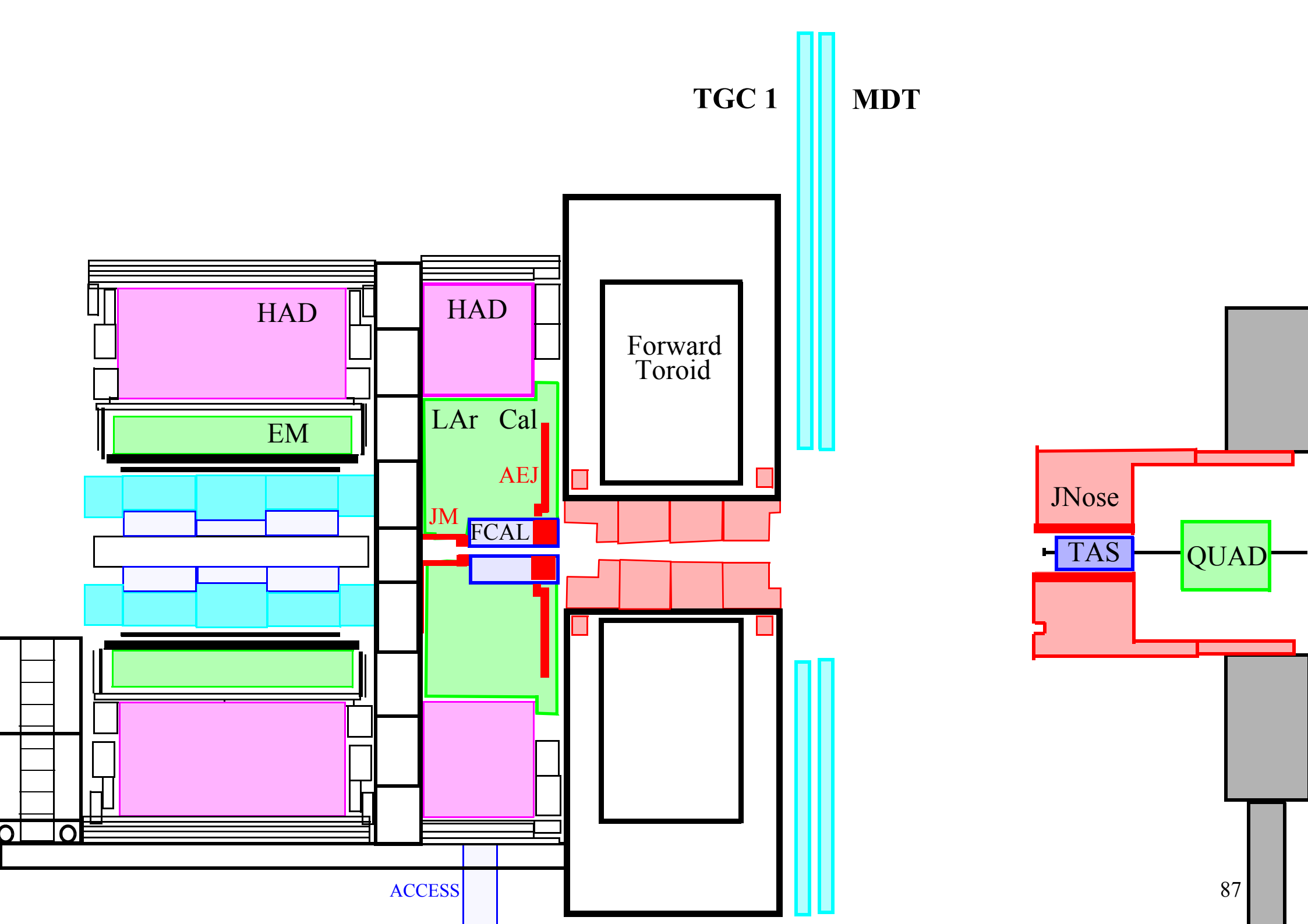
85

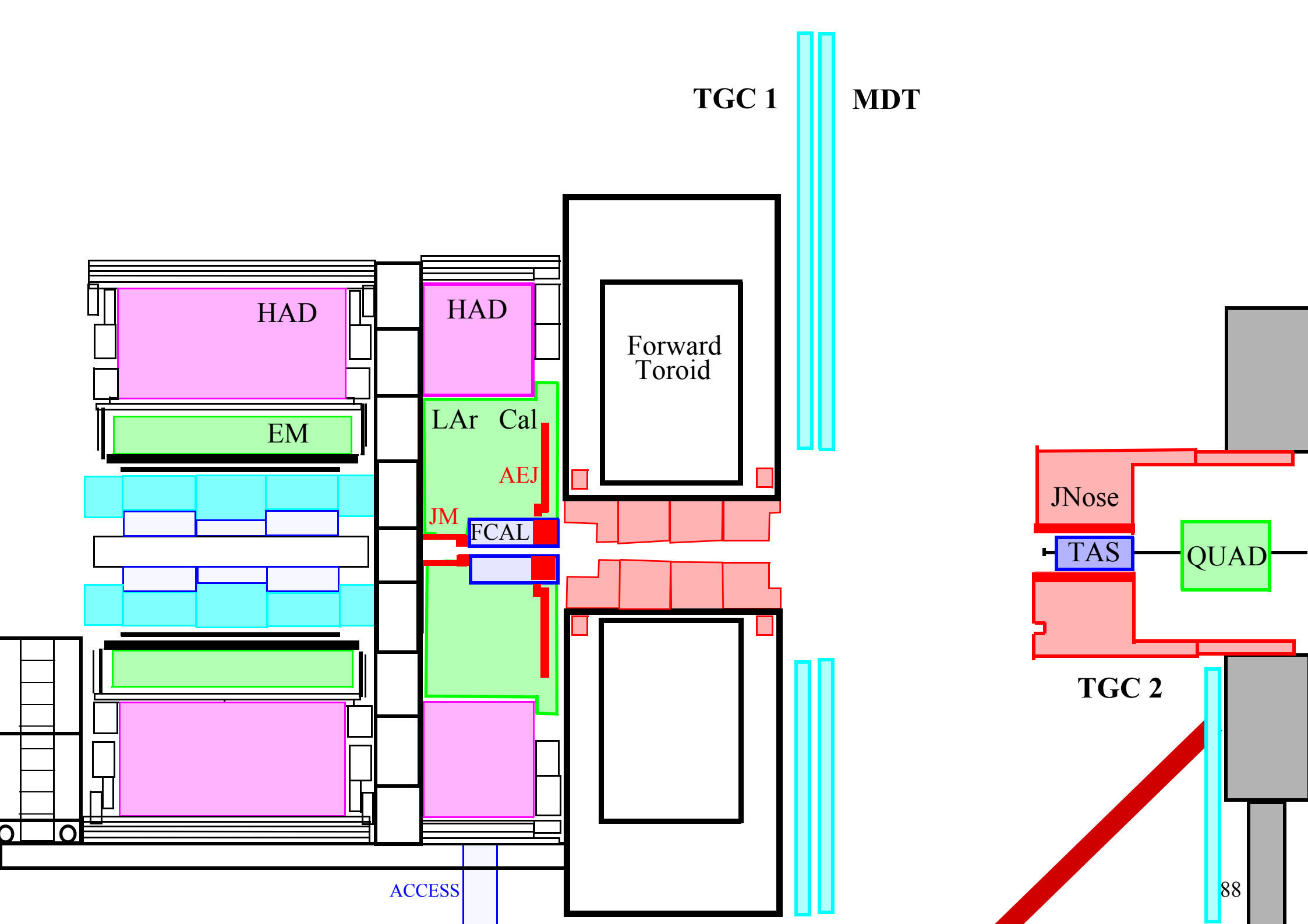
Move BW MDT.

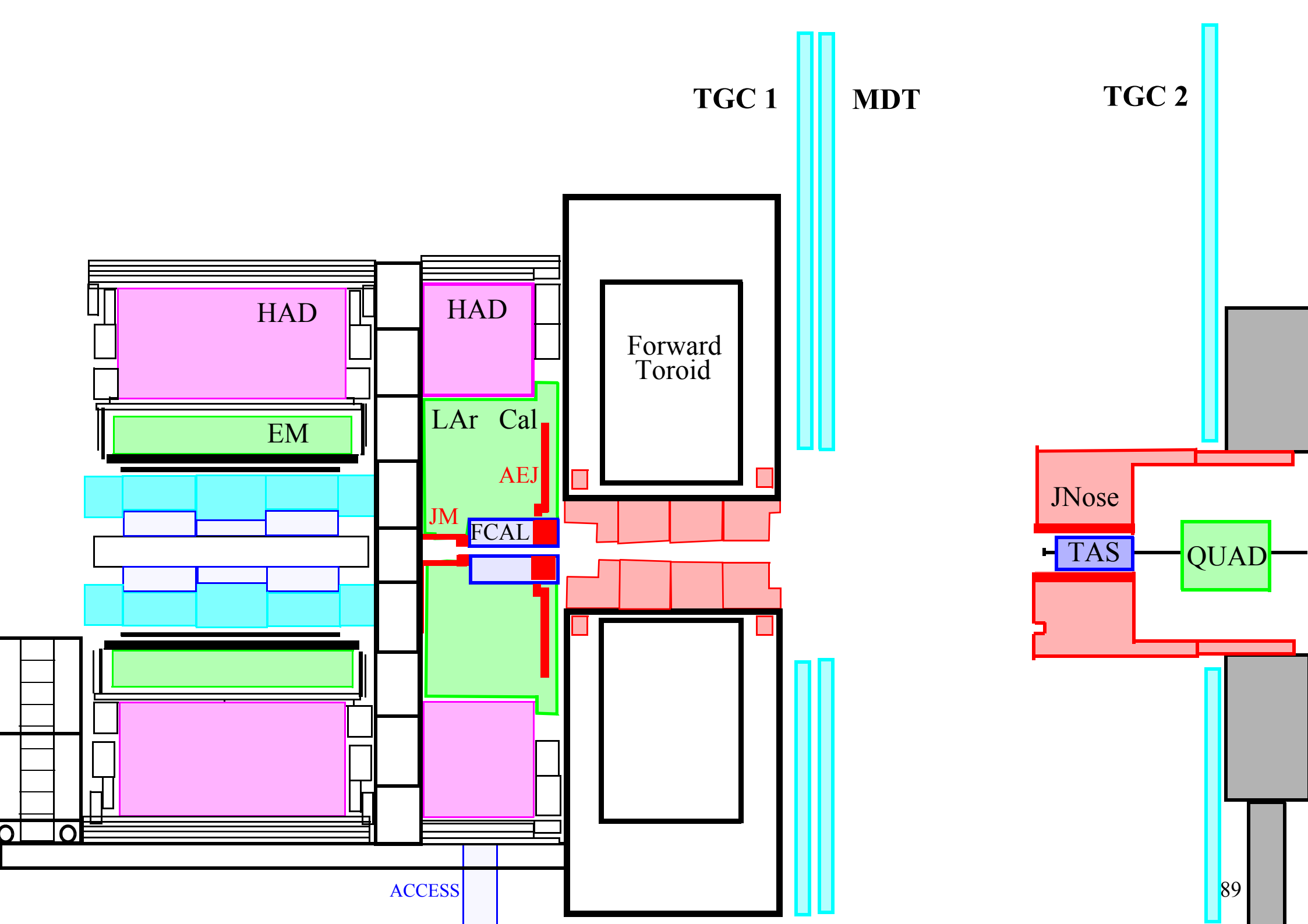
TGC 1

MDT









TGC 1

MDT

TGC 2

HAD

HAD

Forward
Toroid

EM

LAr Cal

AEJ

JM

FCAL

JNose

TAS

QUAD

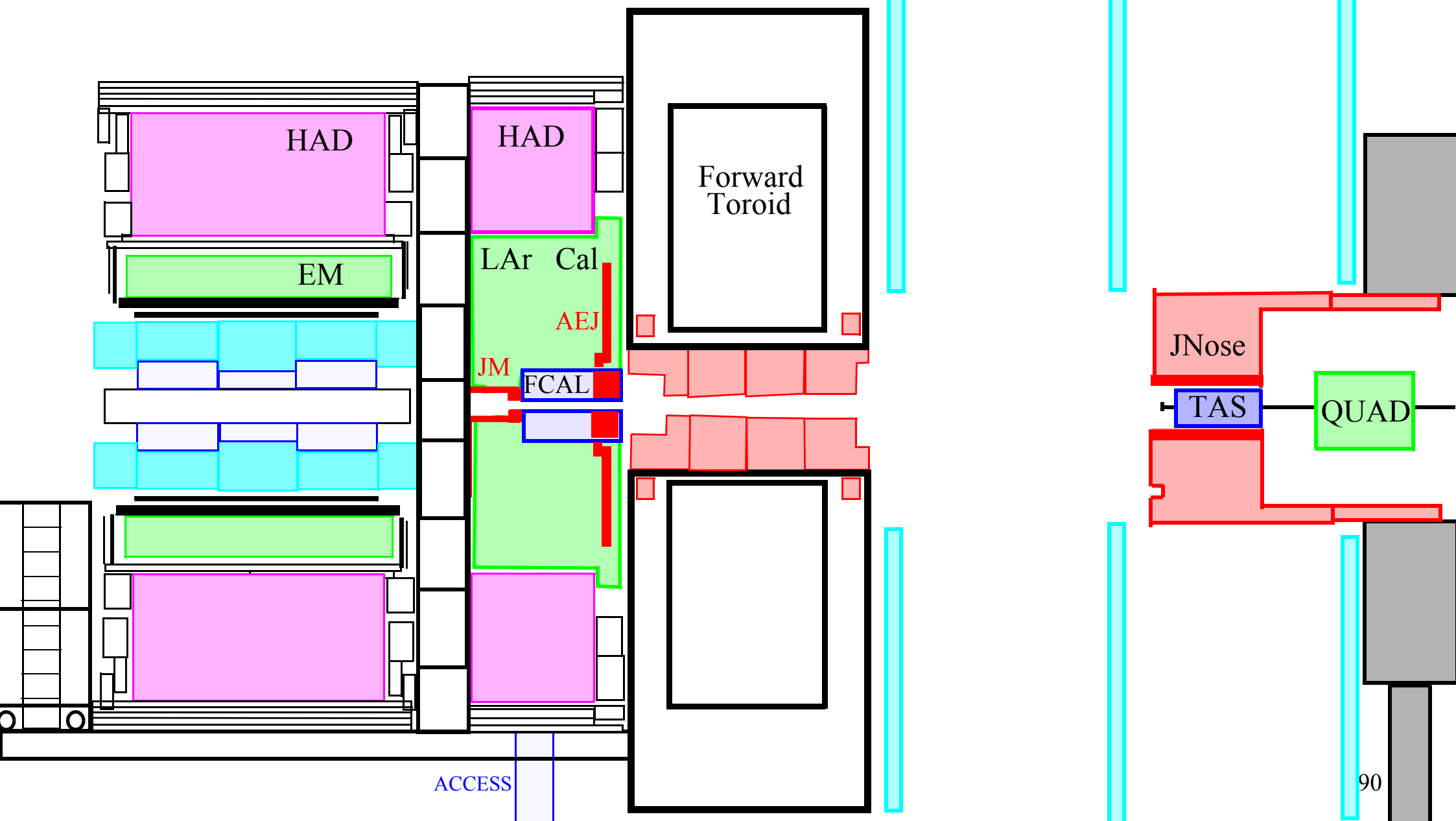
ACCESS

Move BW MDT.

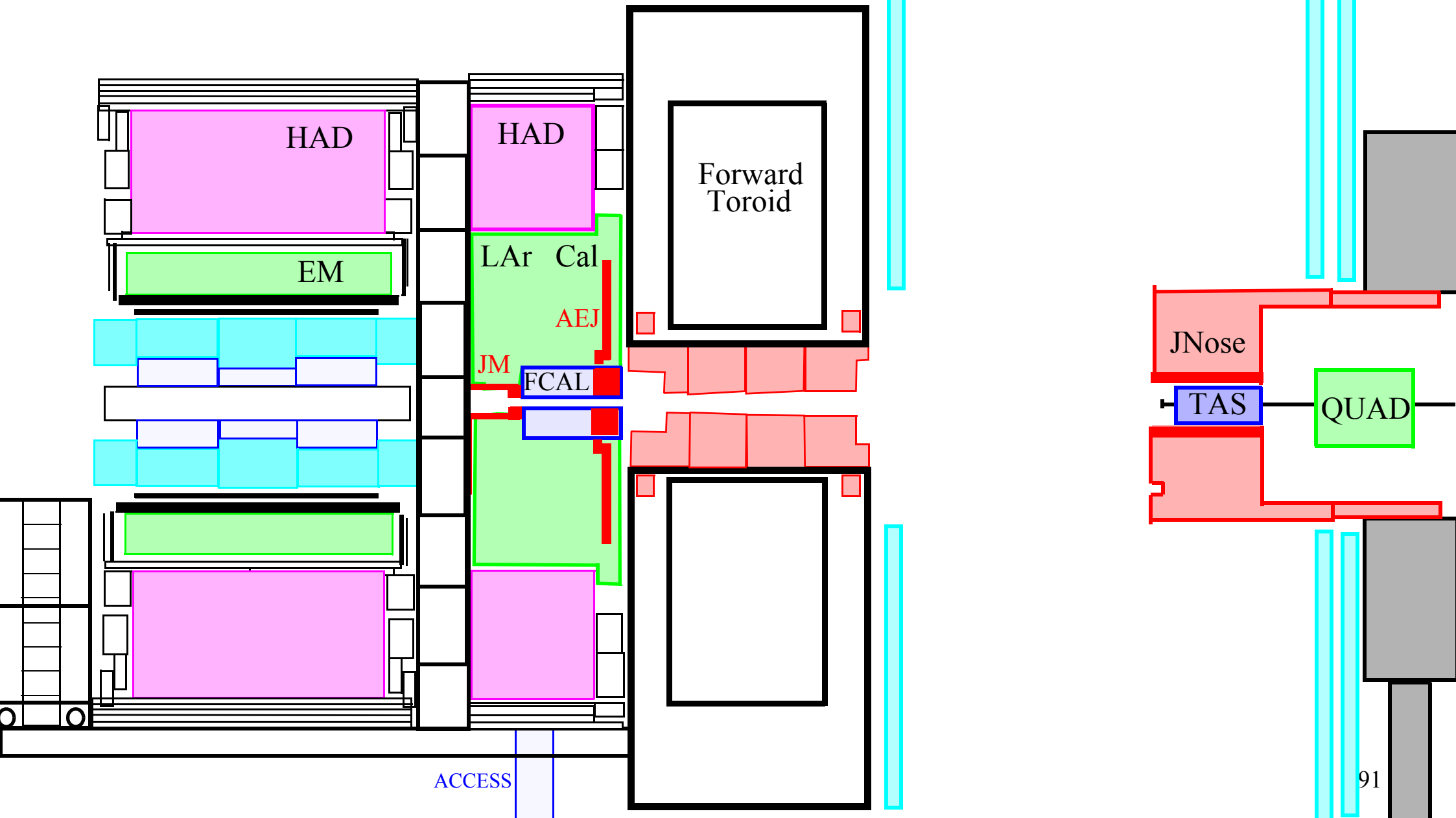
TGC 1

MDT

TGC 2

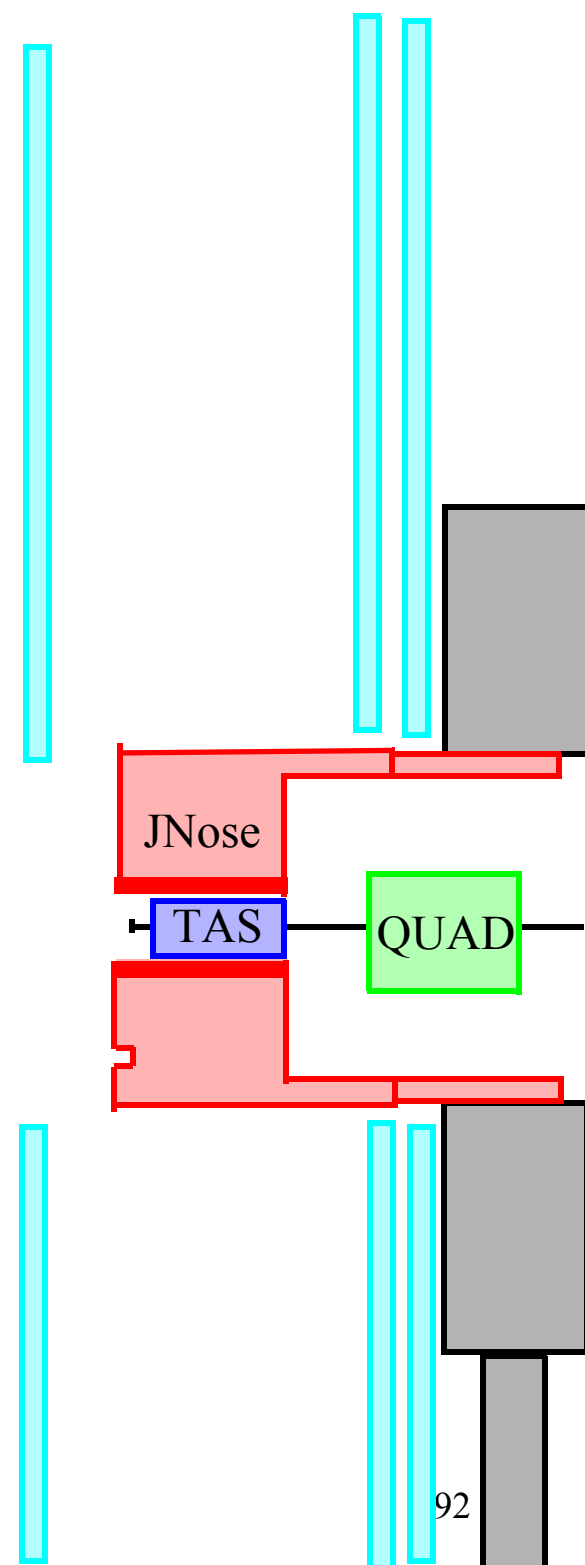
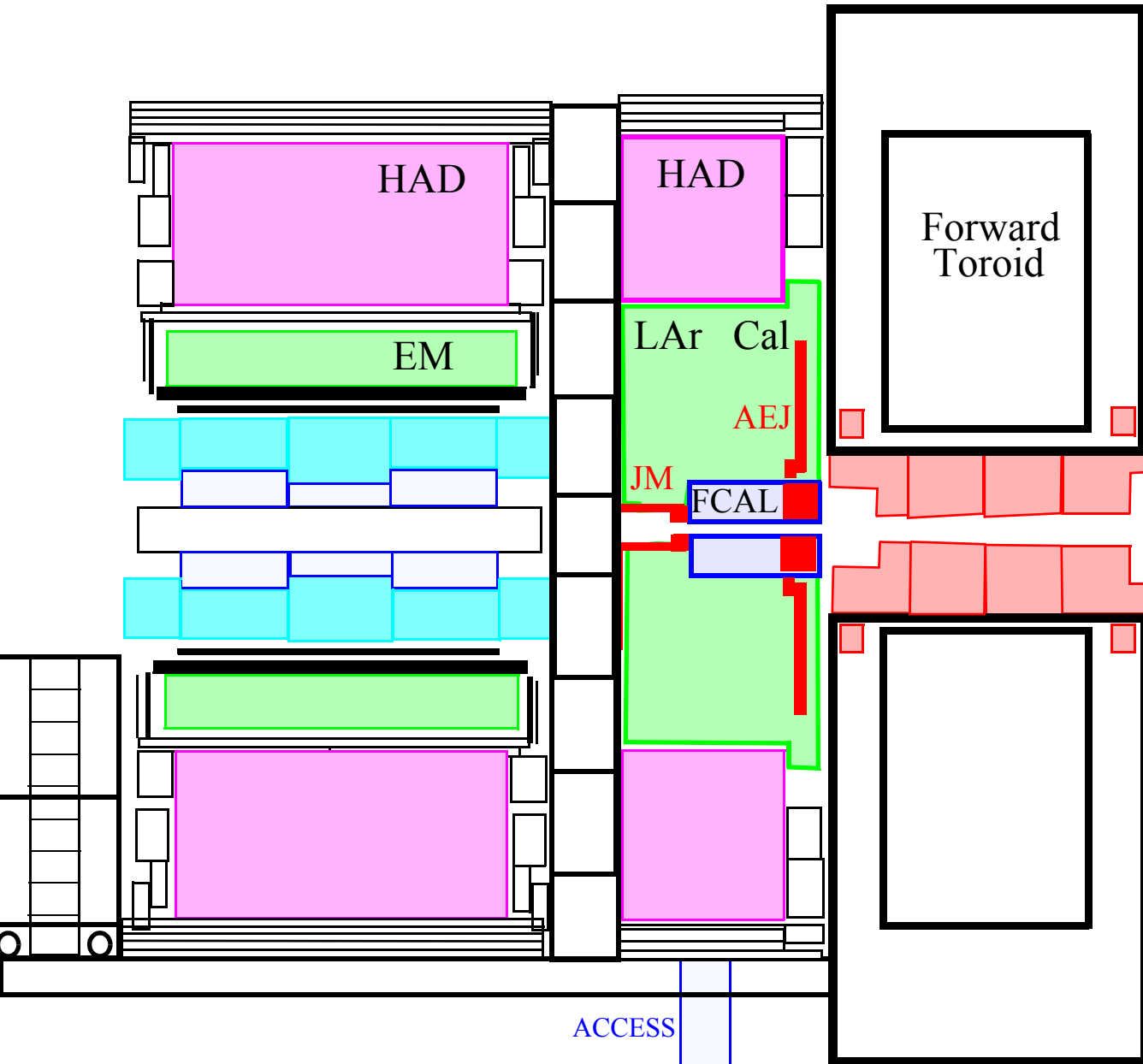


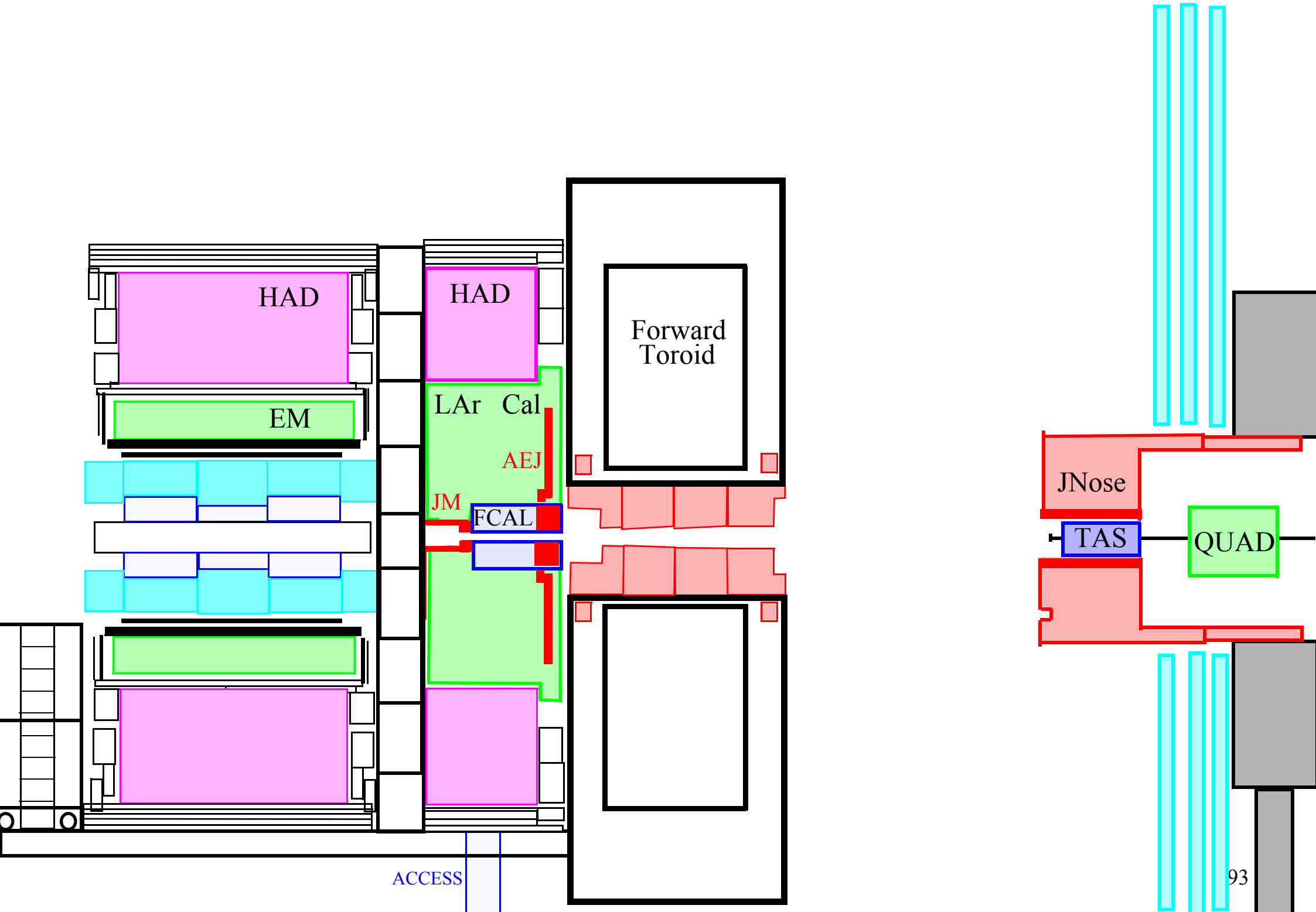
TGC 1



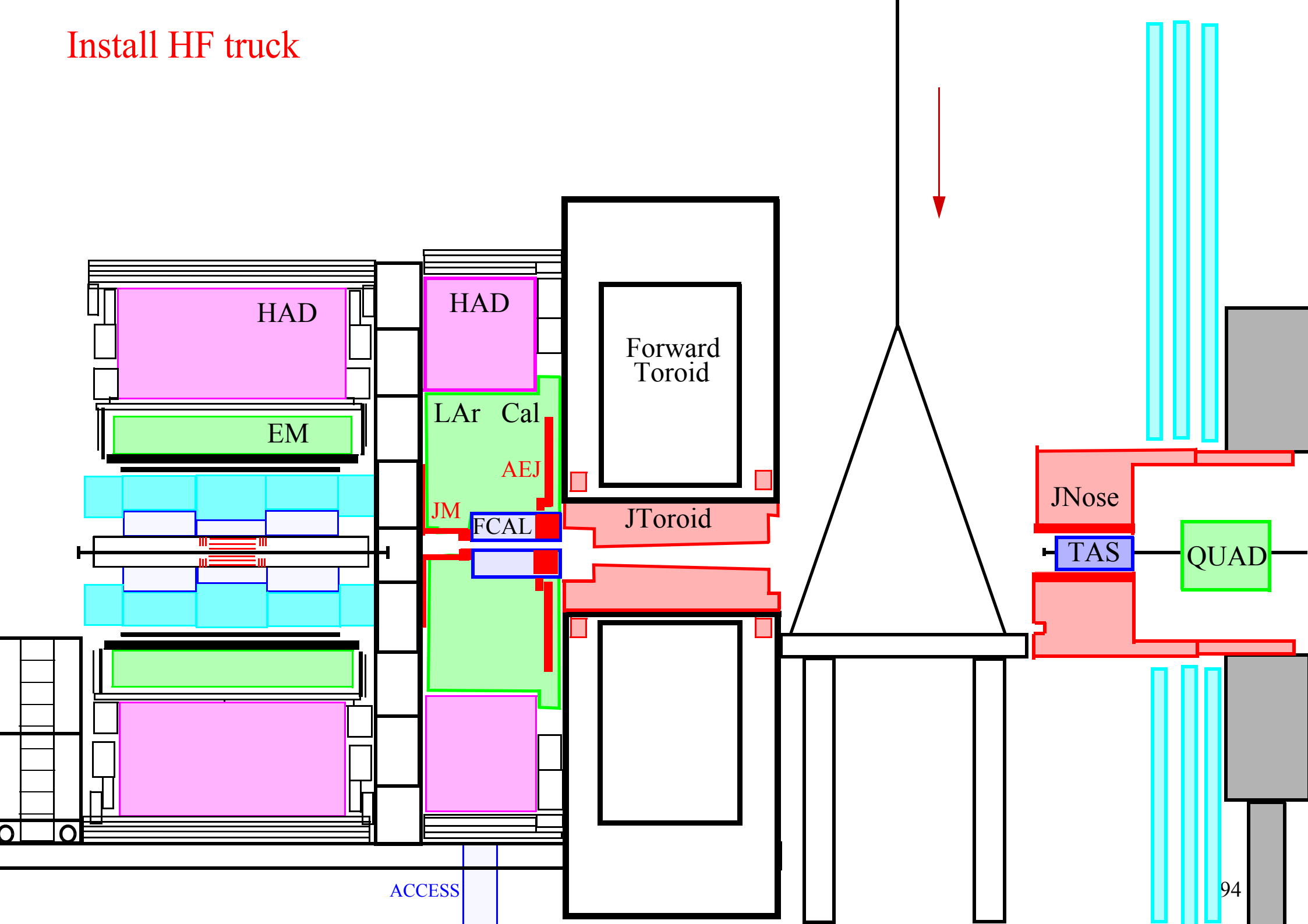
ACCESS

Move TGC1.

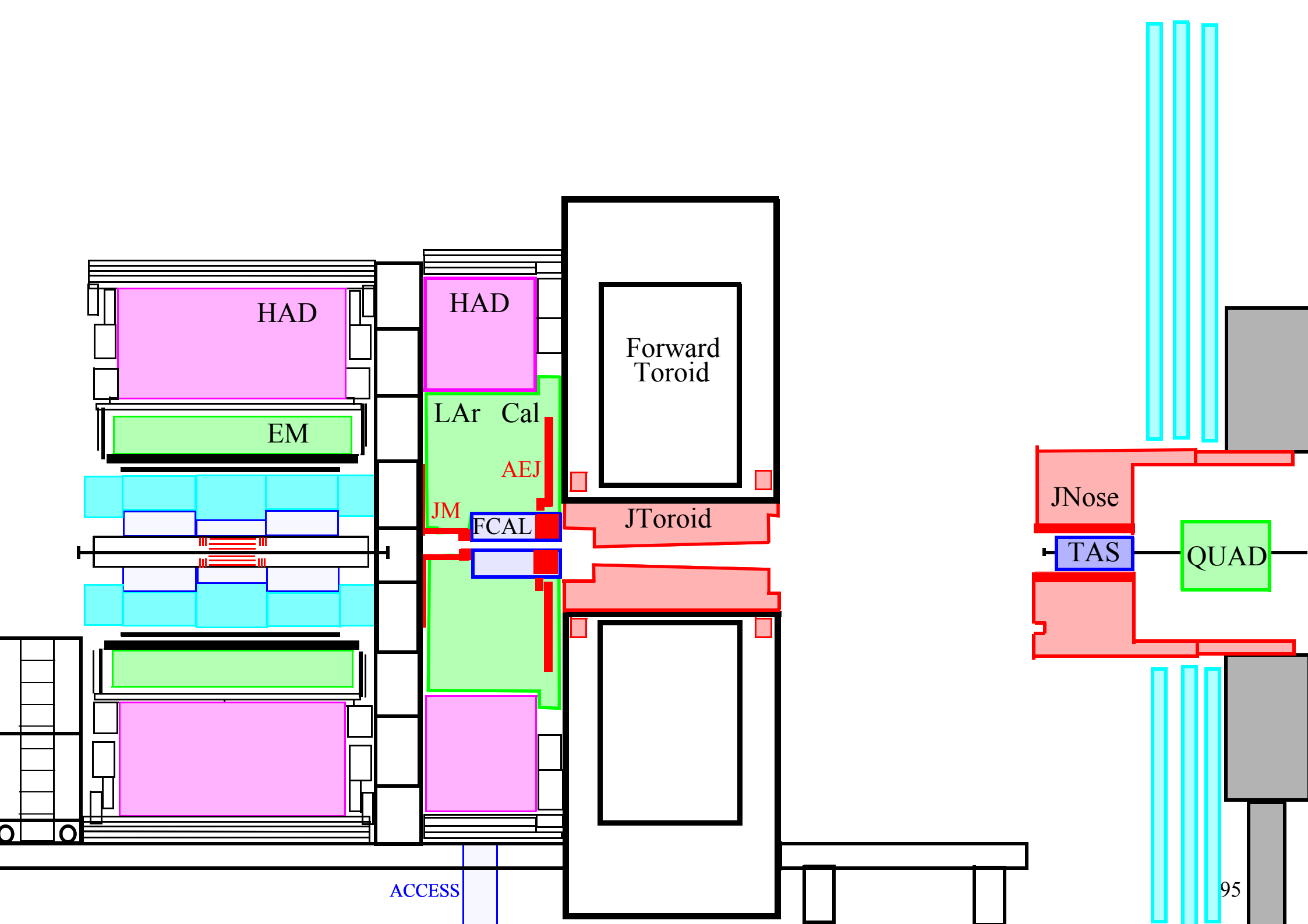




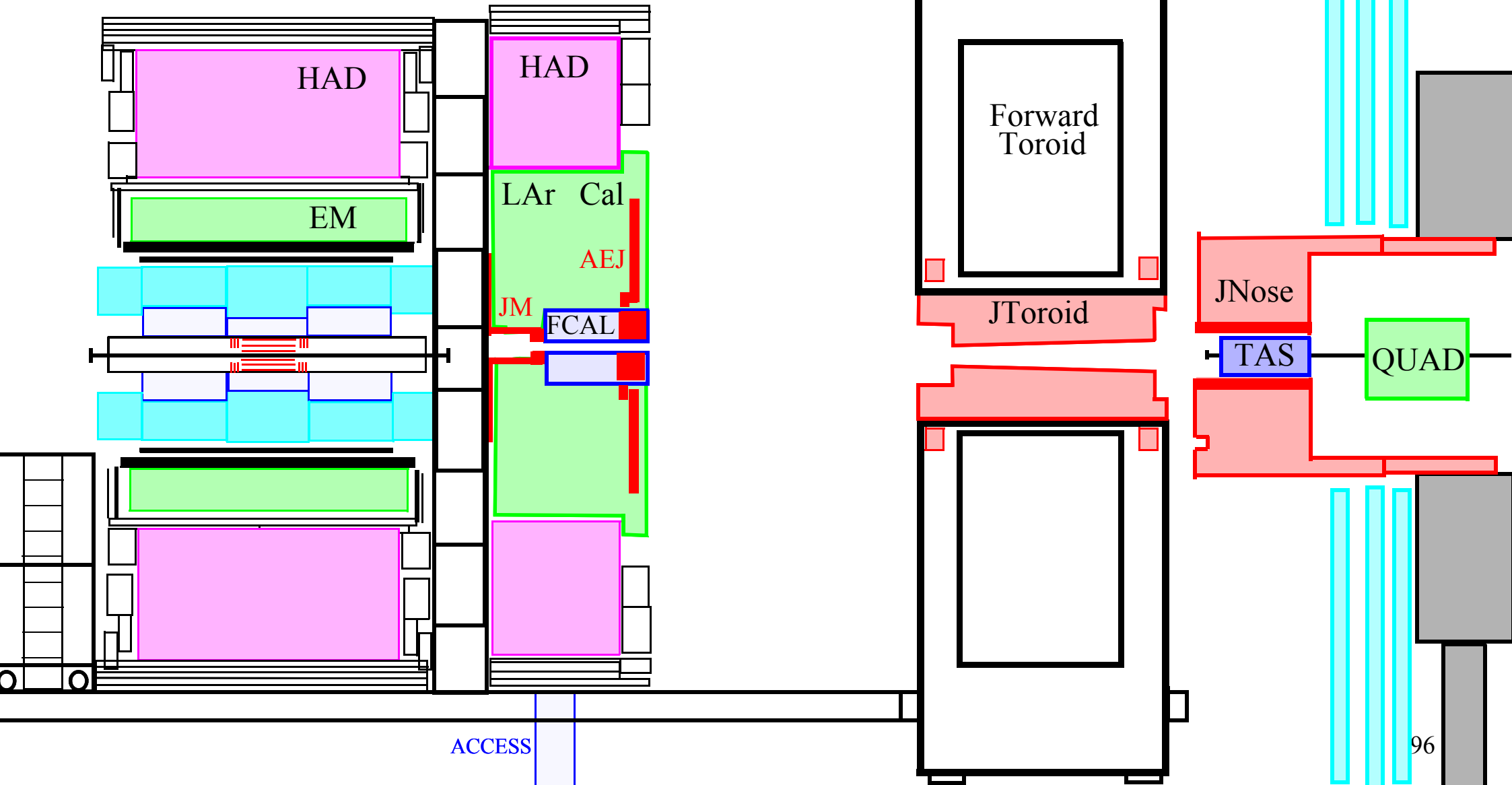
Install HF truck



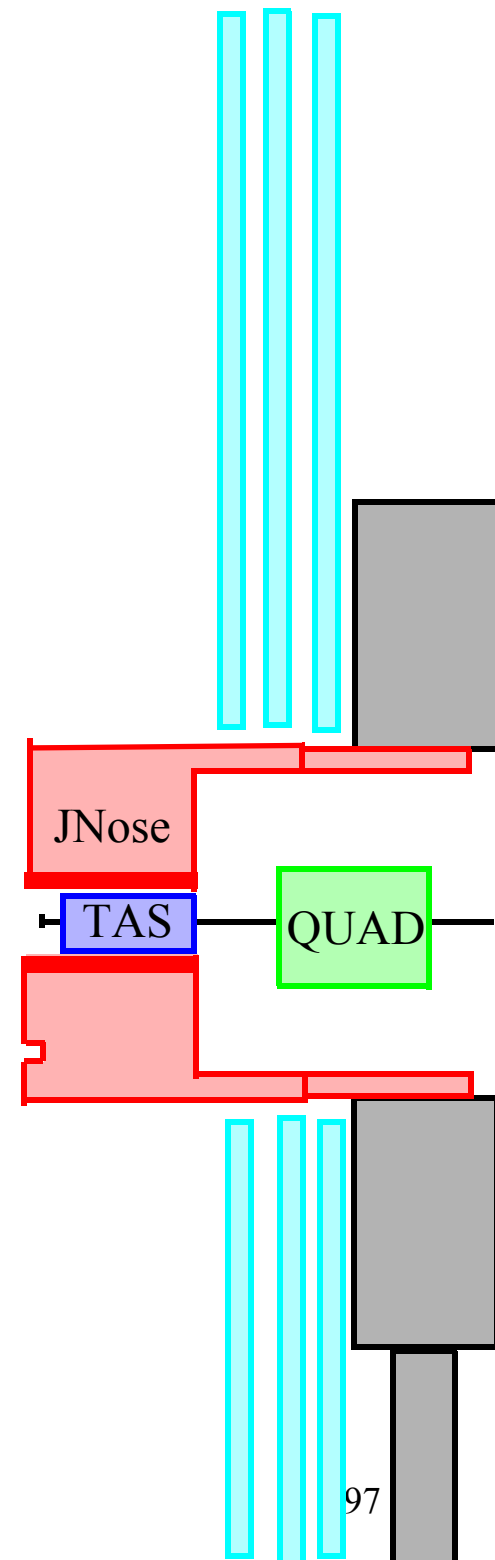
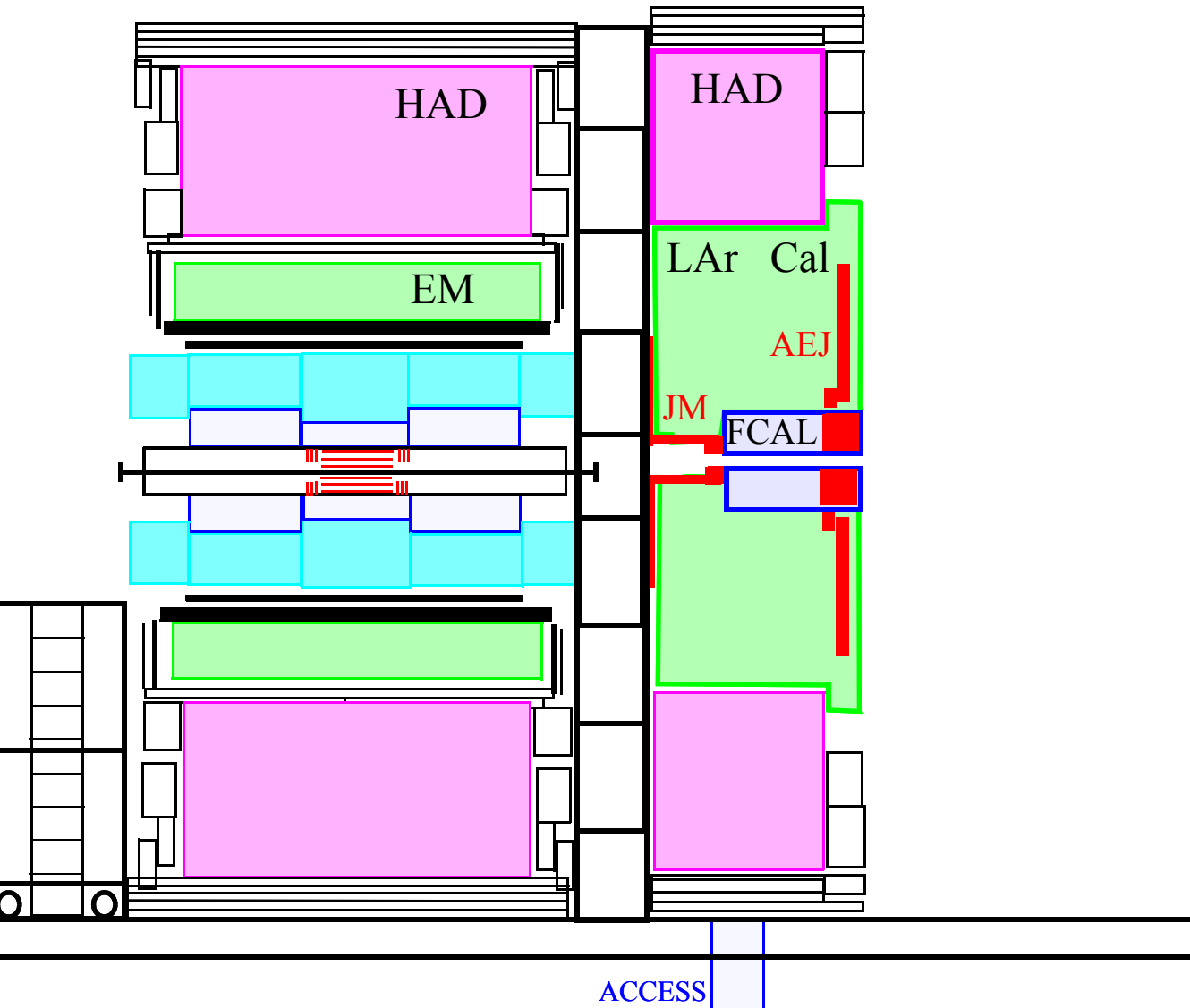
ACCESS



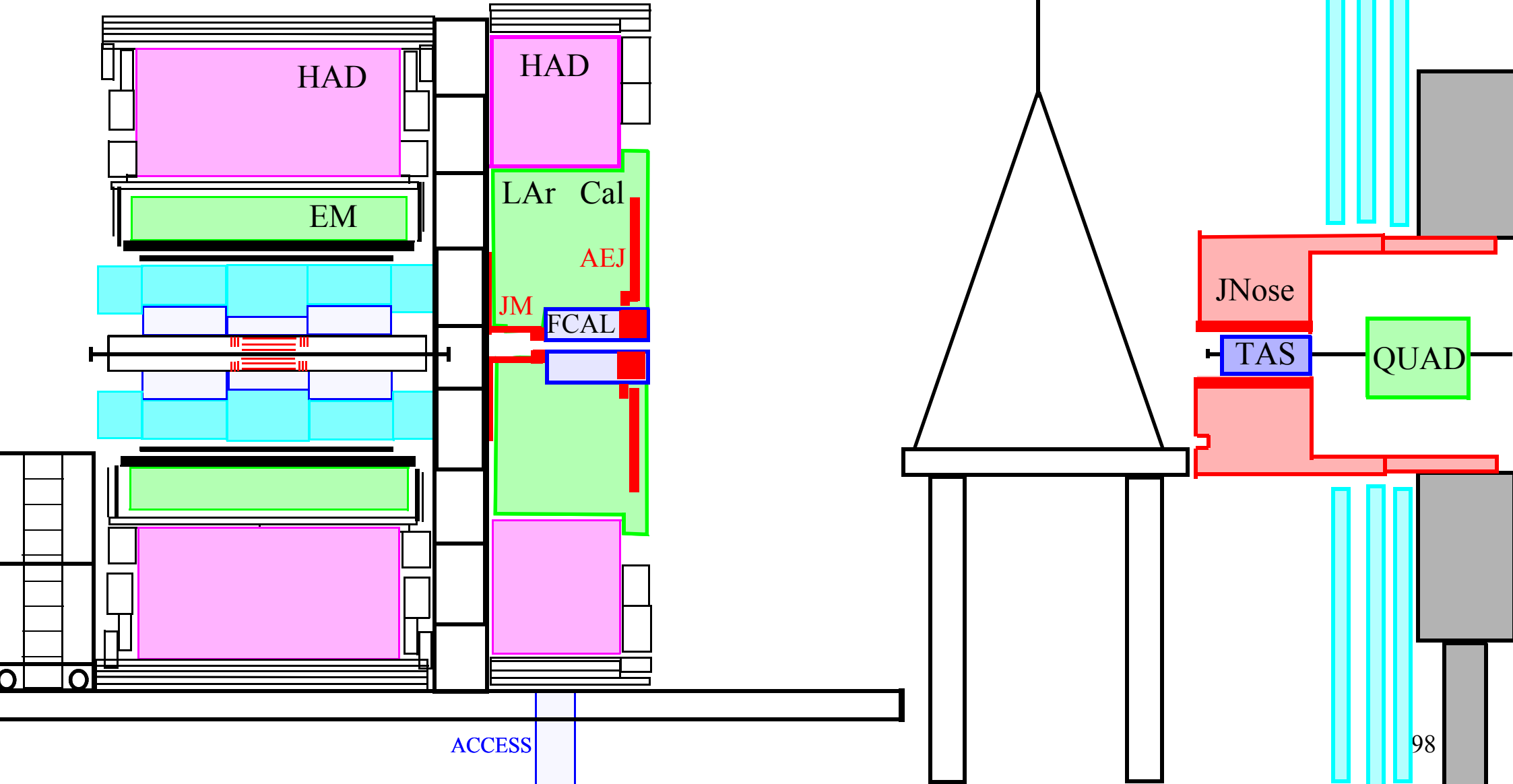
Move ECT.

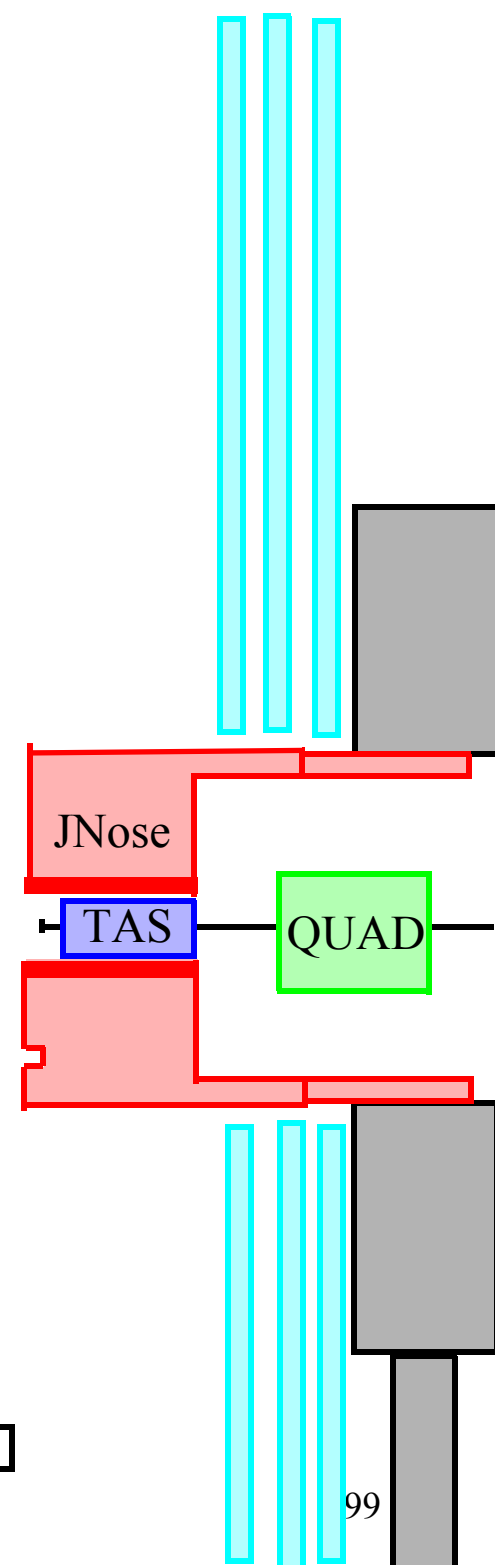
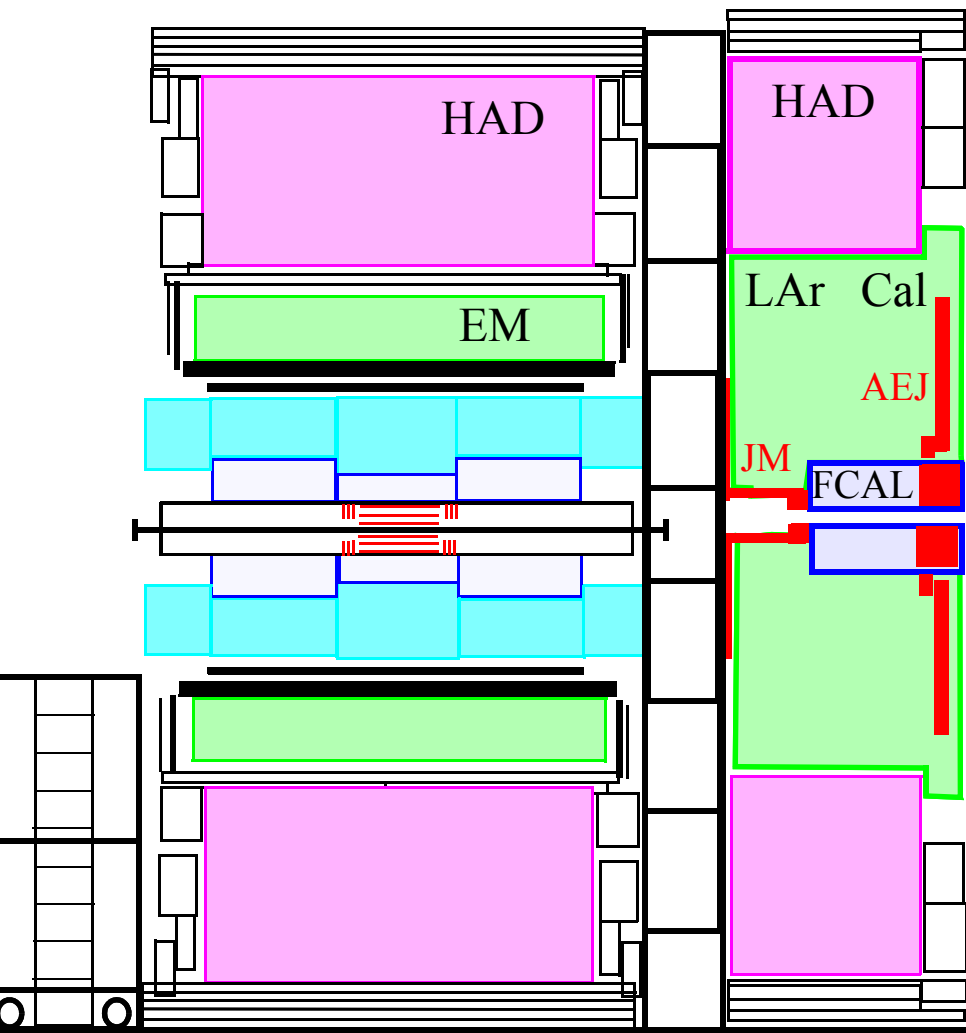


Move ECT sideways out of the beamline.

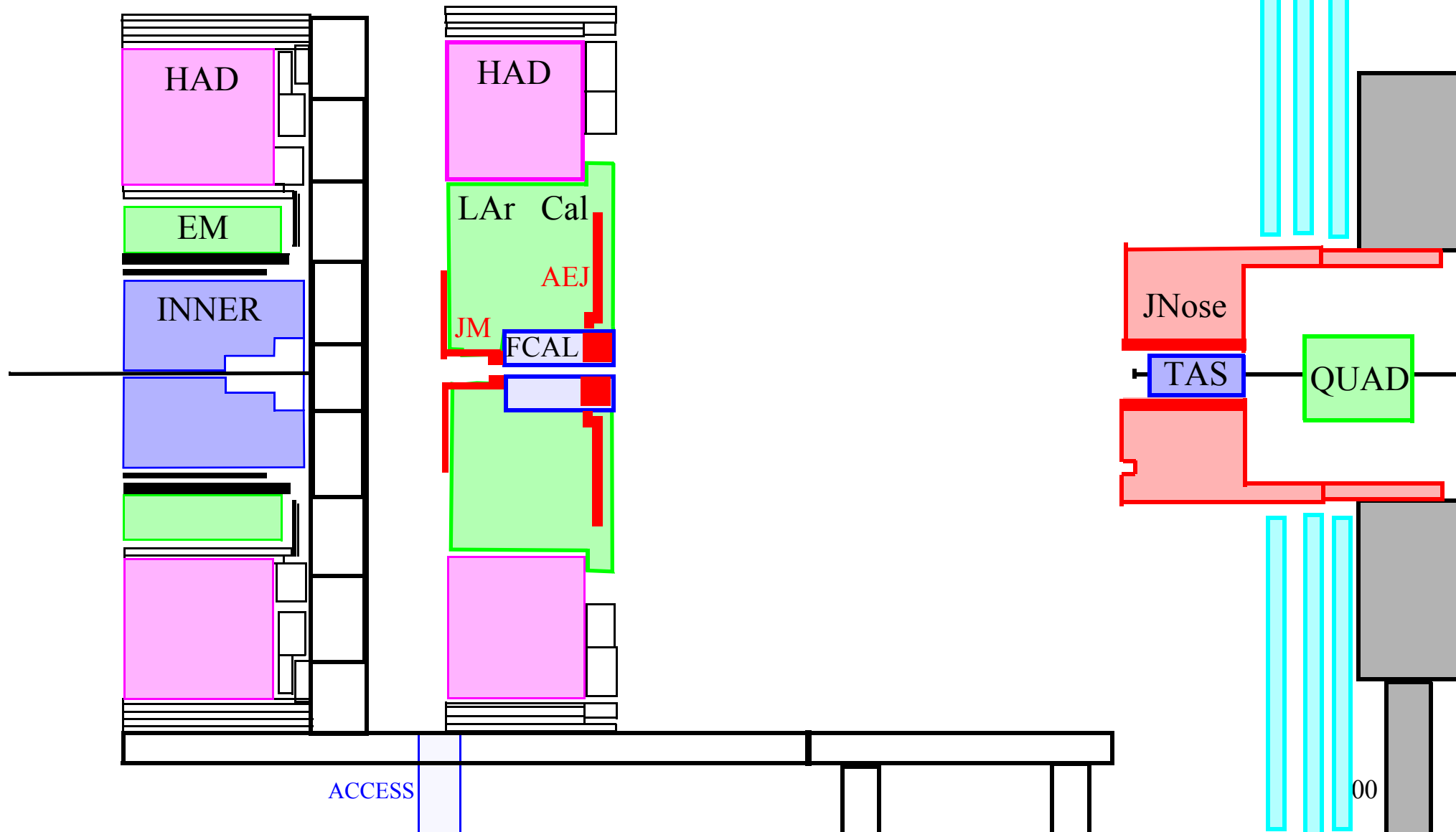


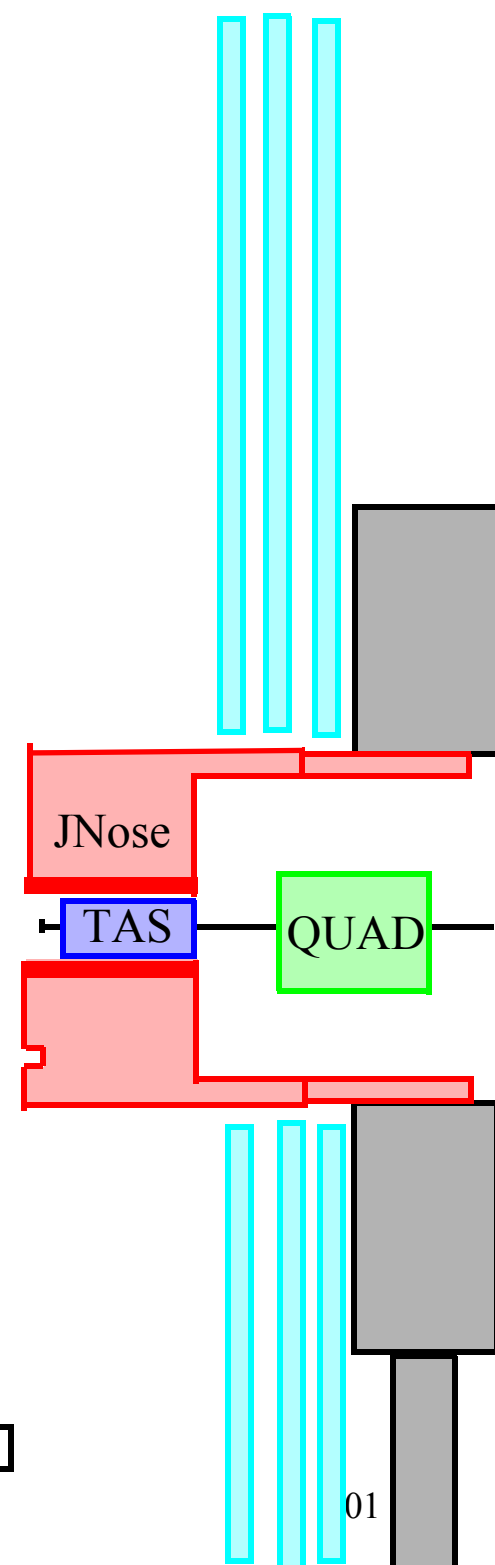
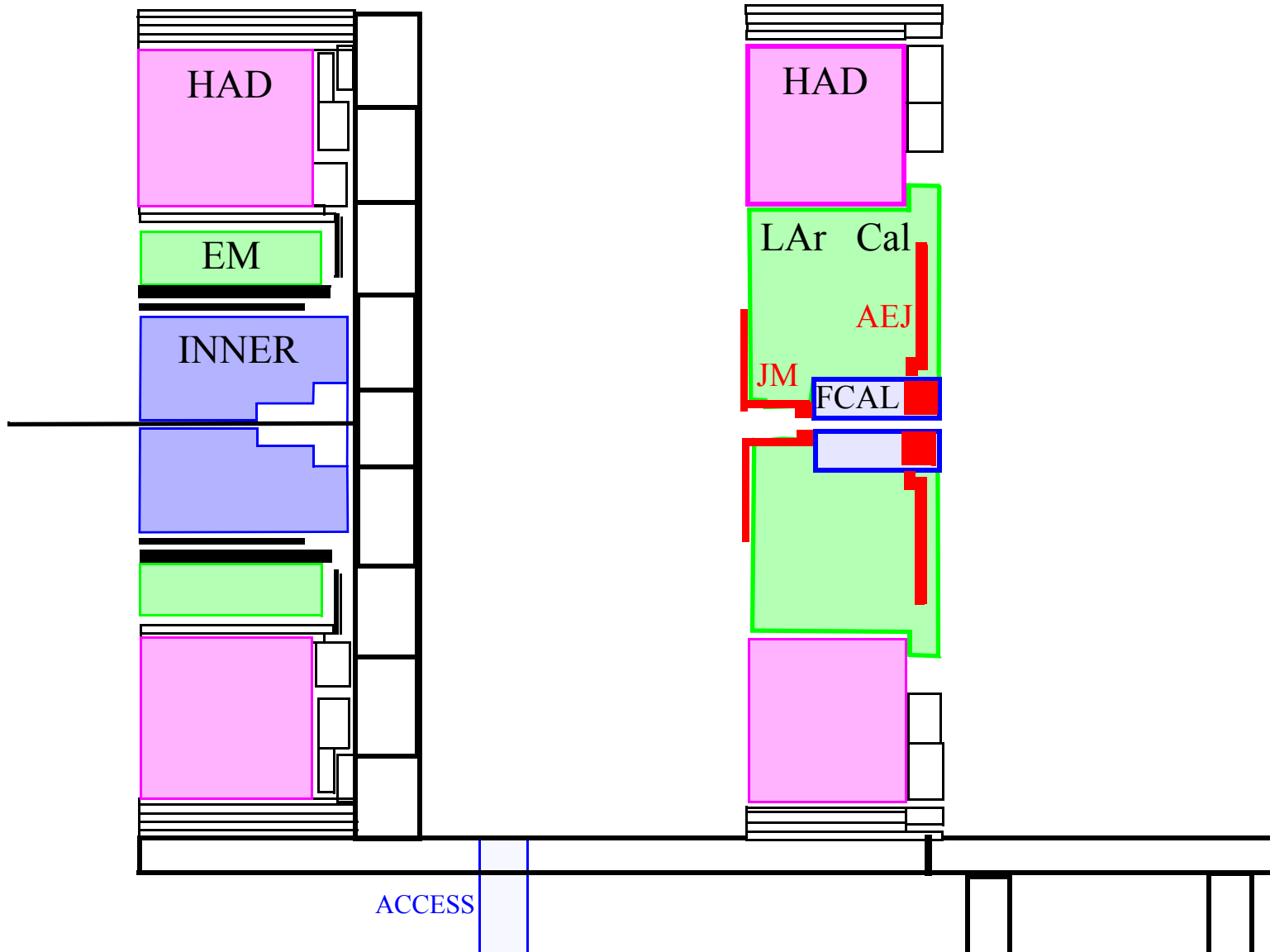
Install second HF truck

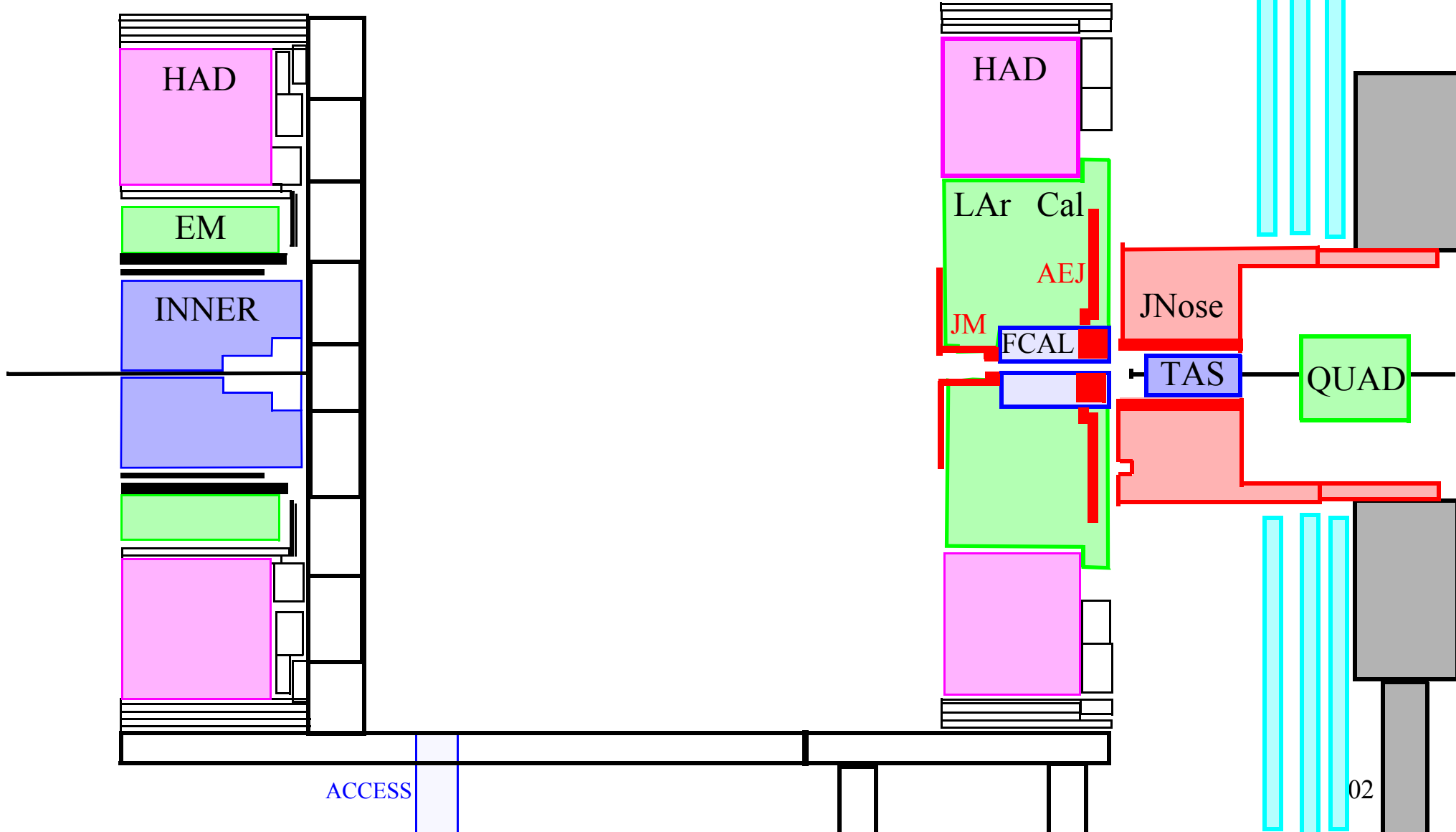




Move calorimeter for beampipe installation.







HAD

EM

INNER

HAD

LAr Cal

AEJ

JM

FCAL

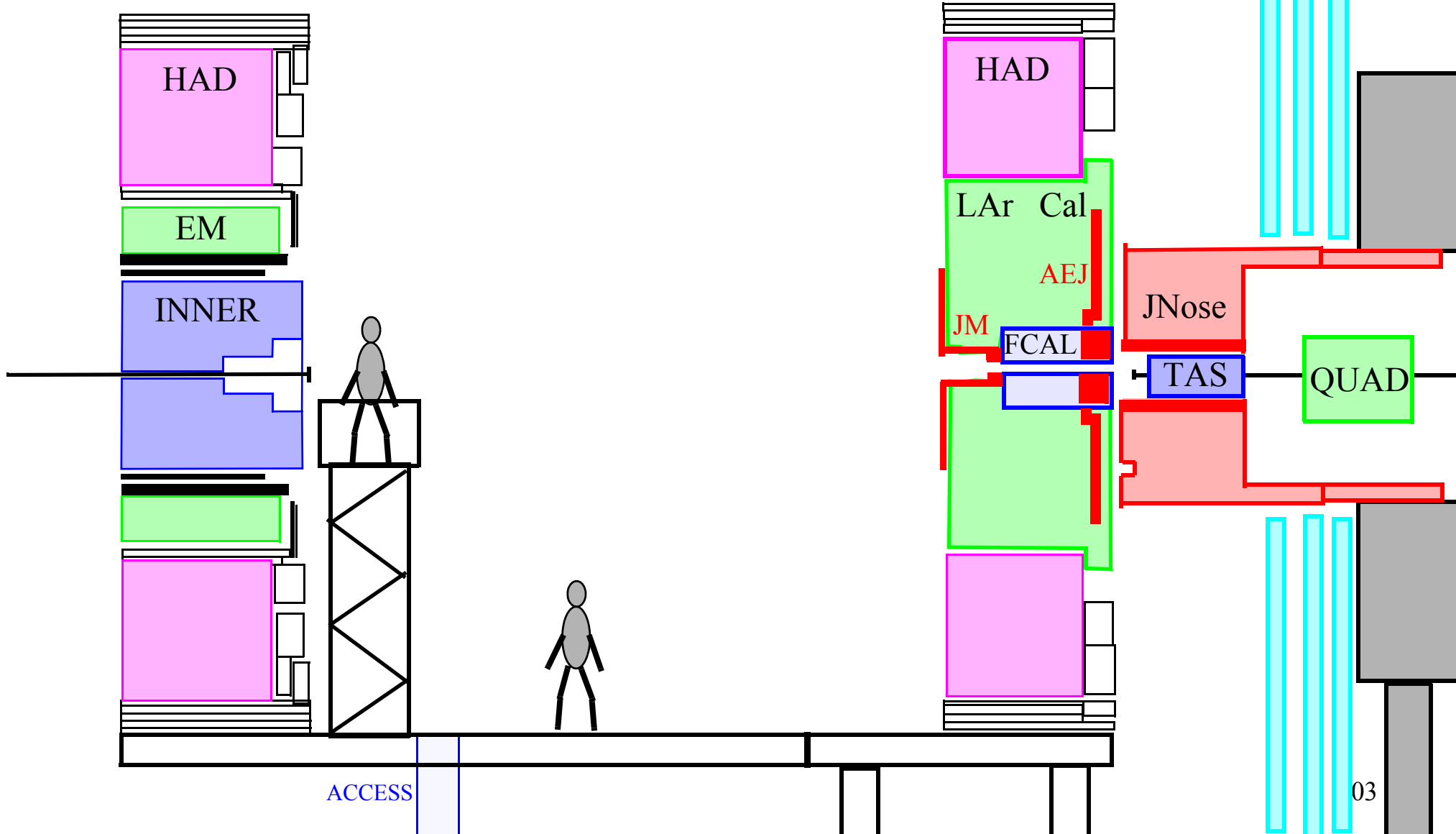
JNose

TAS

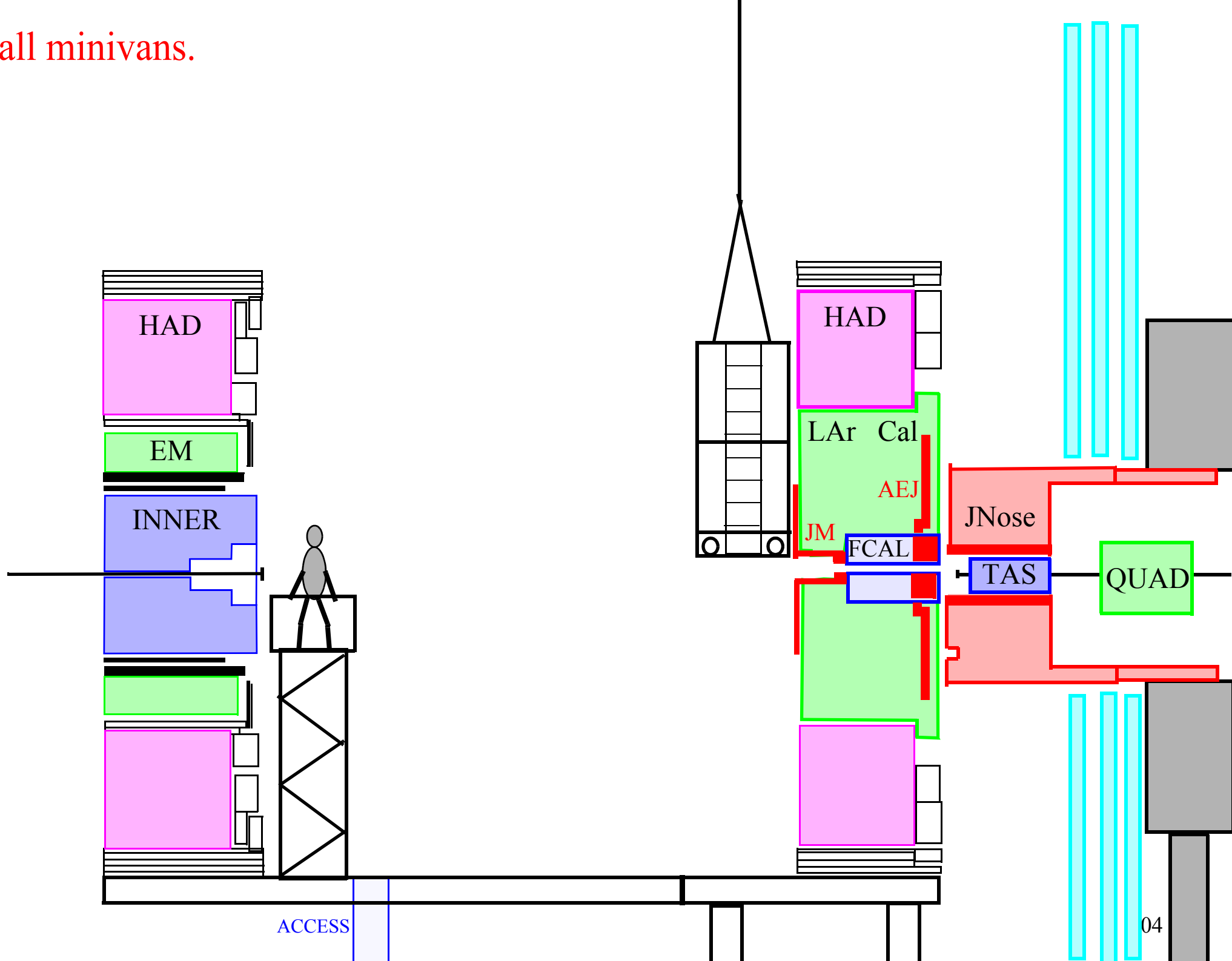
QUAD

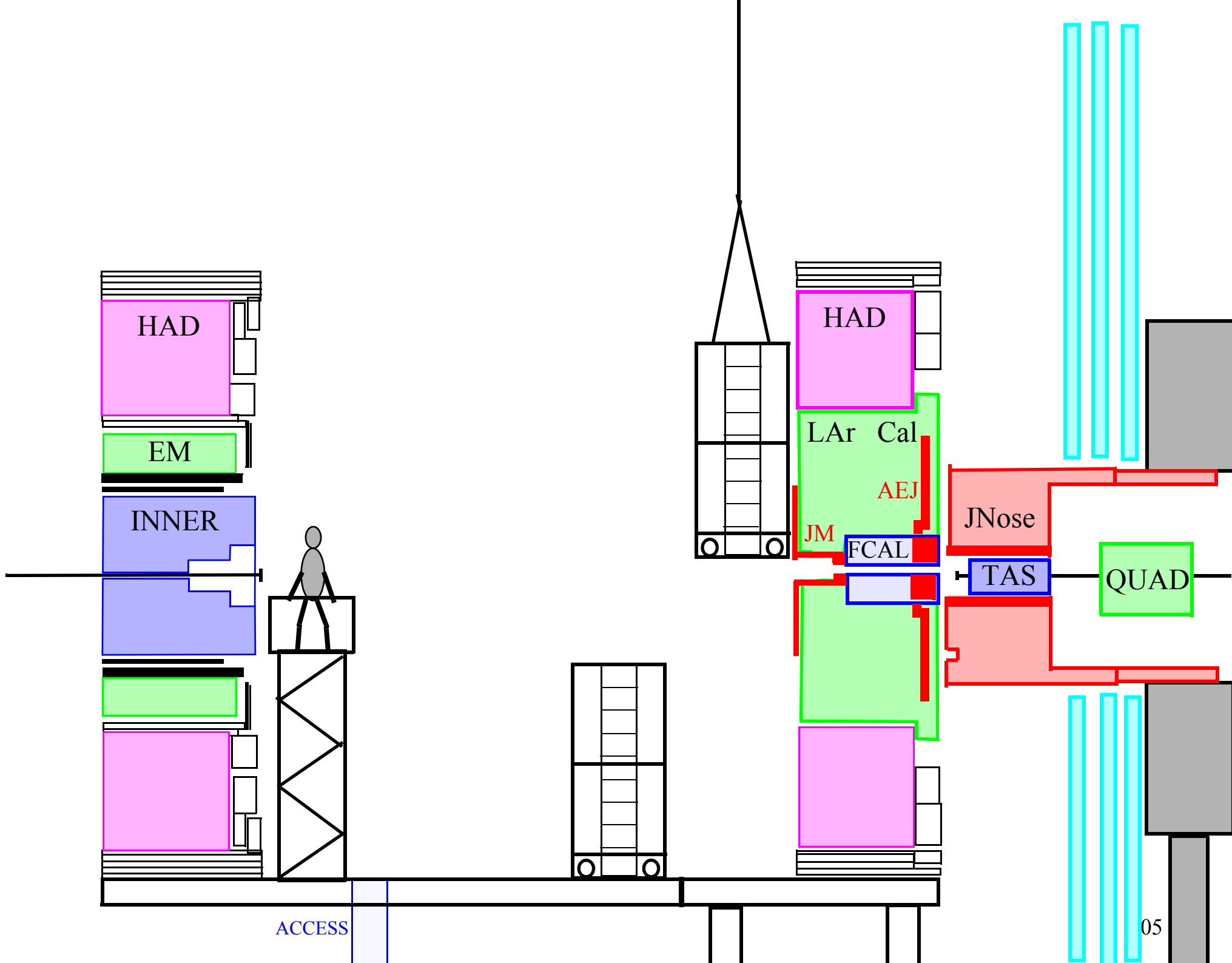
ACCESS

02

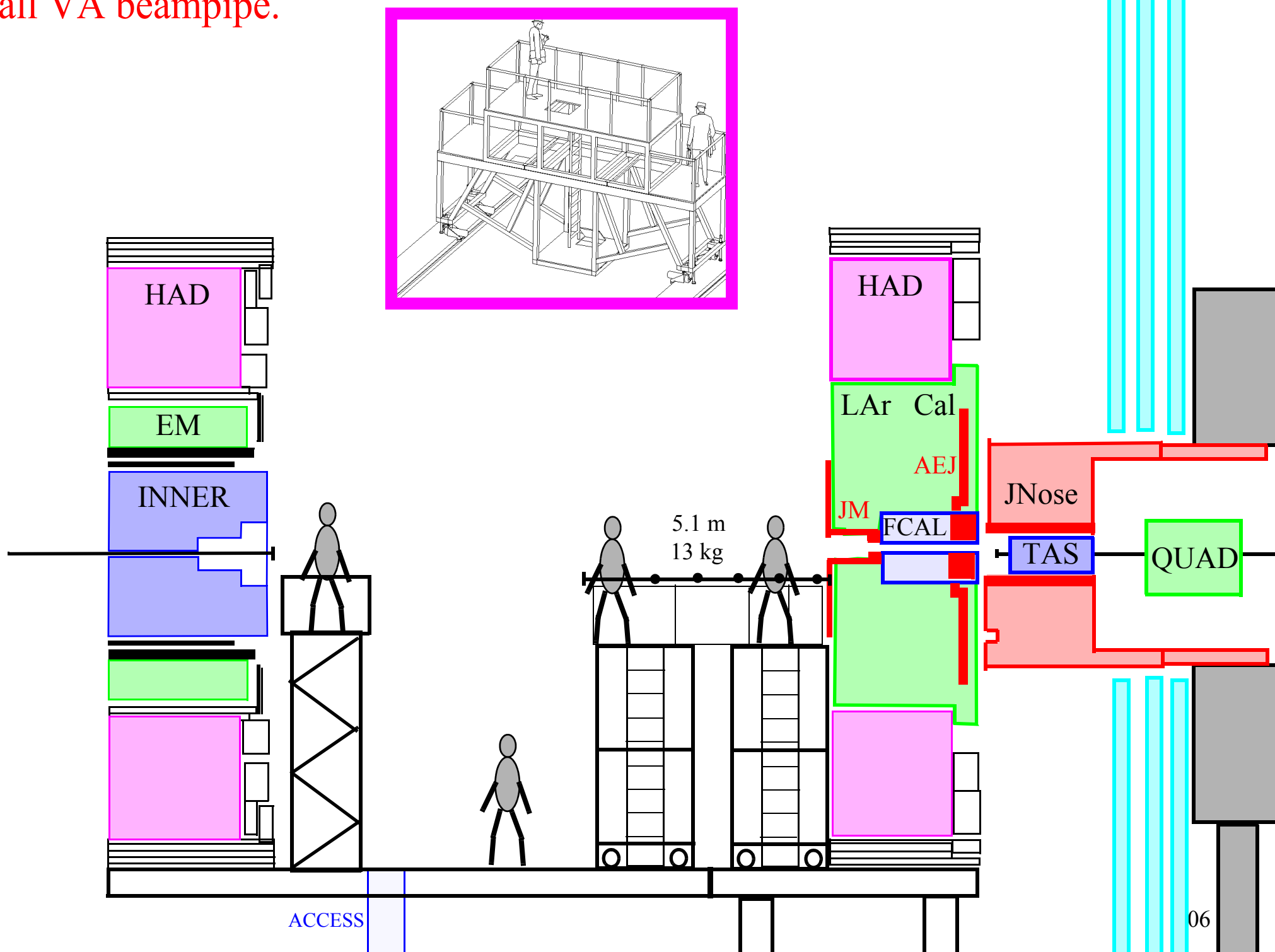


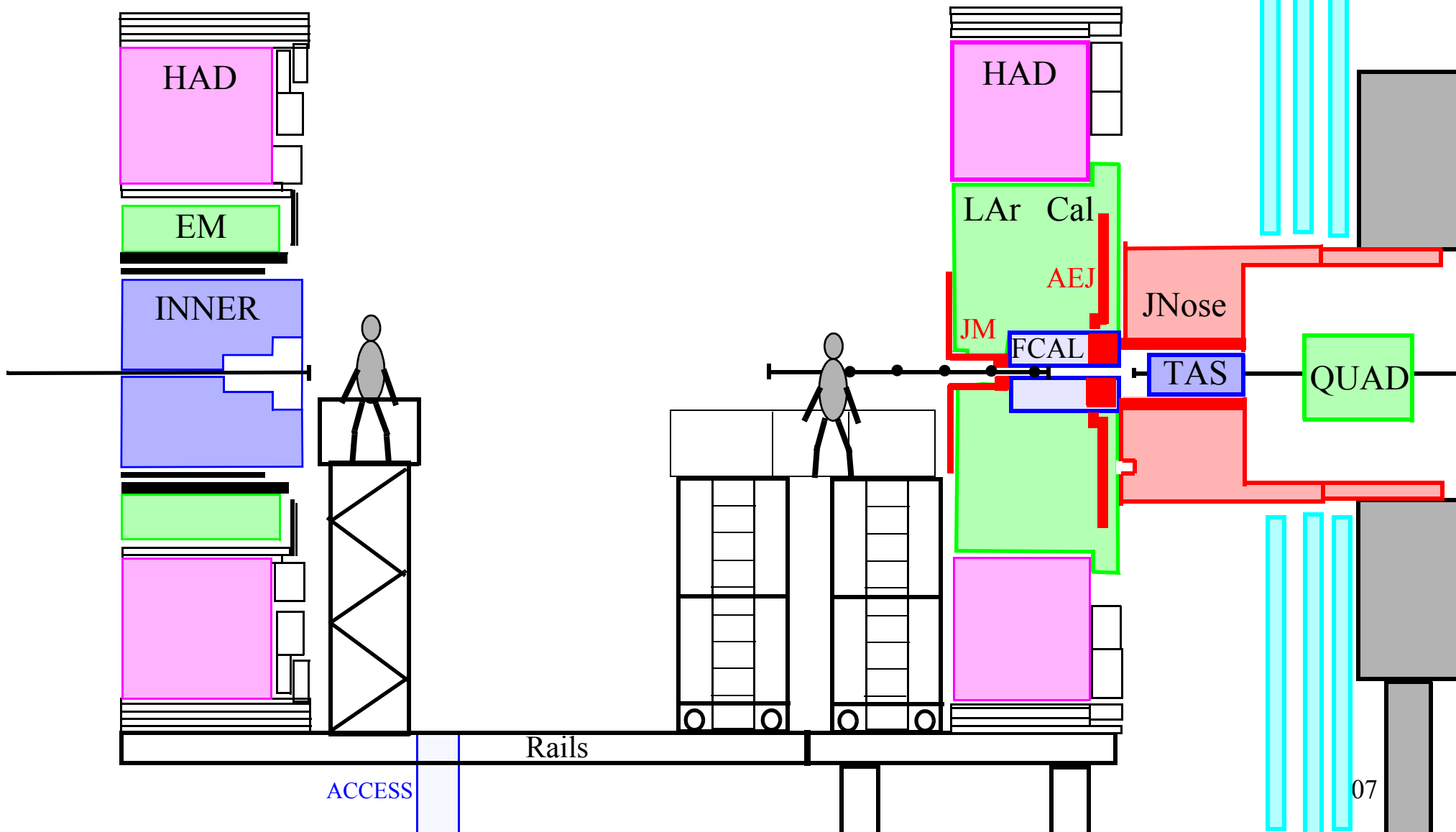
Install minivans.

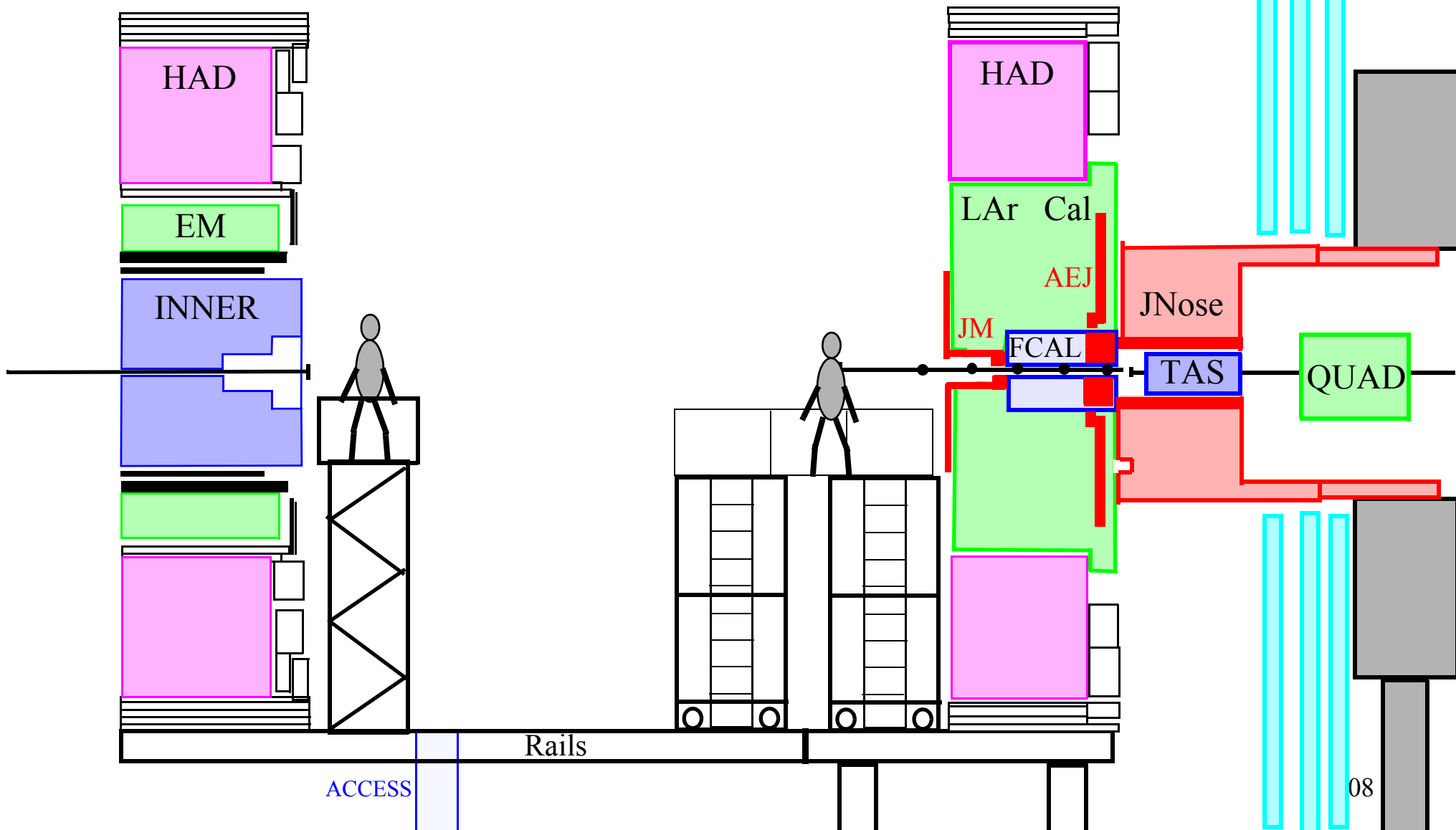


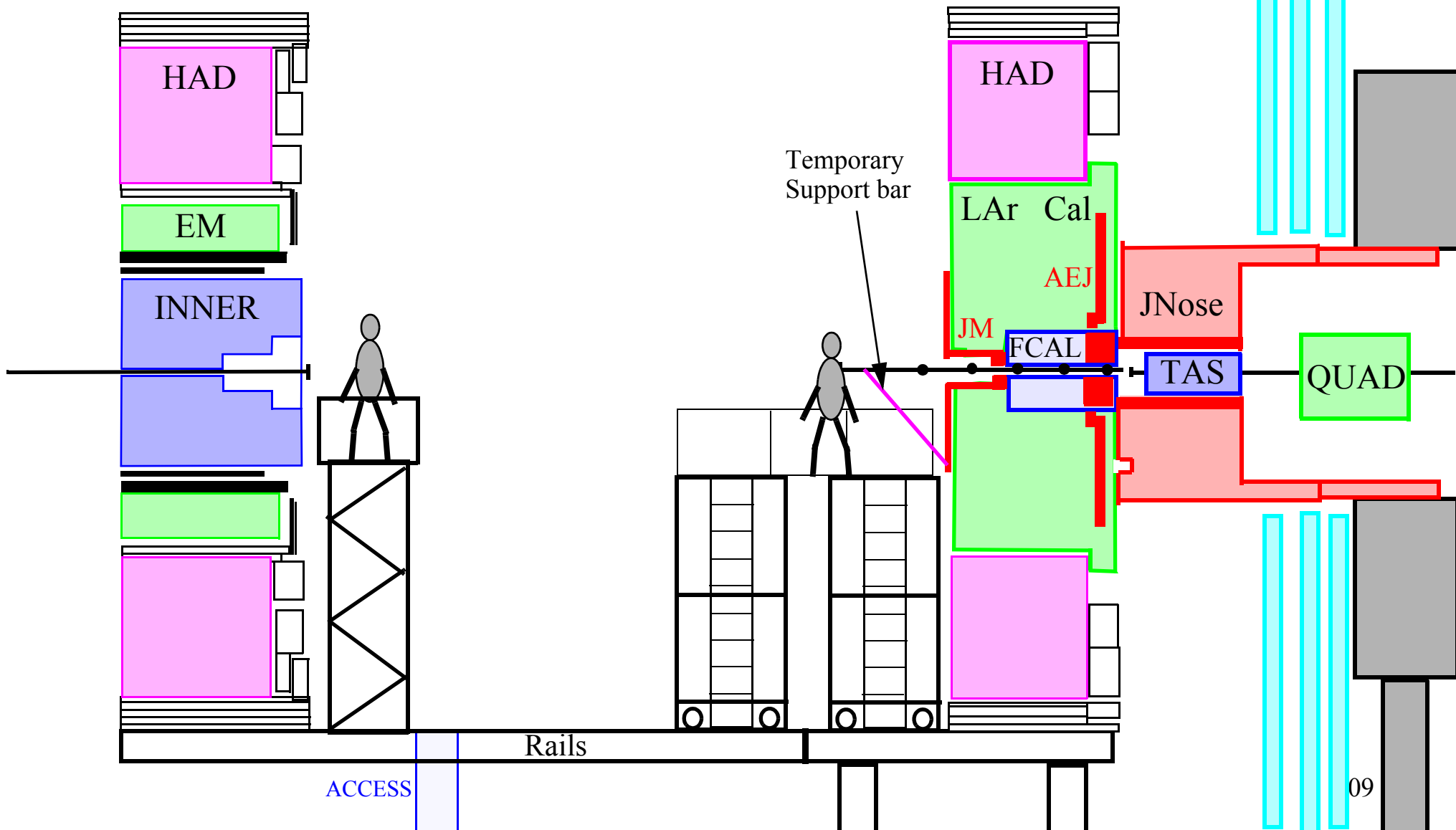


Install VA beampipe.

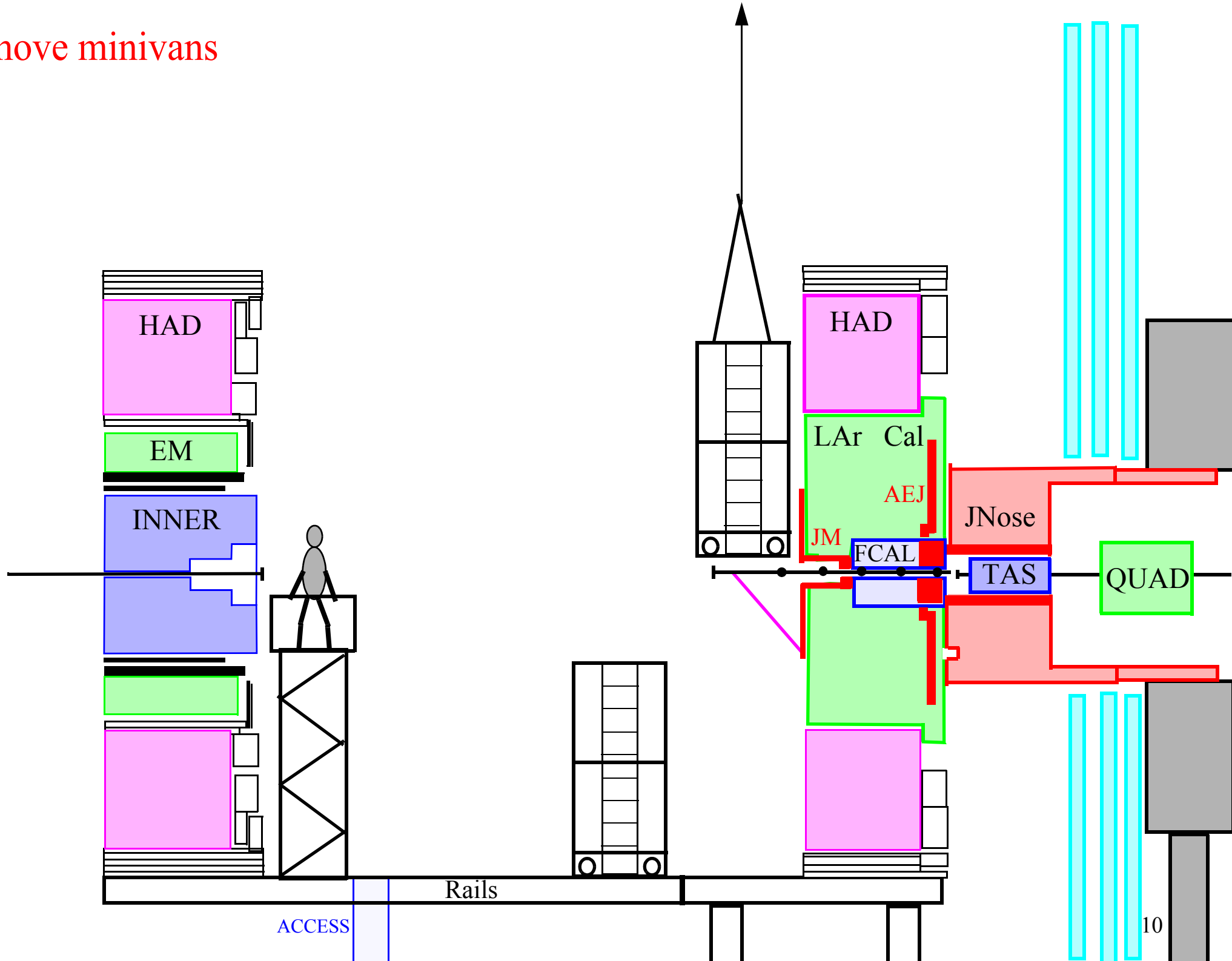


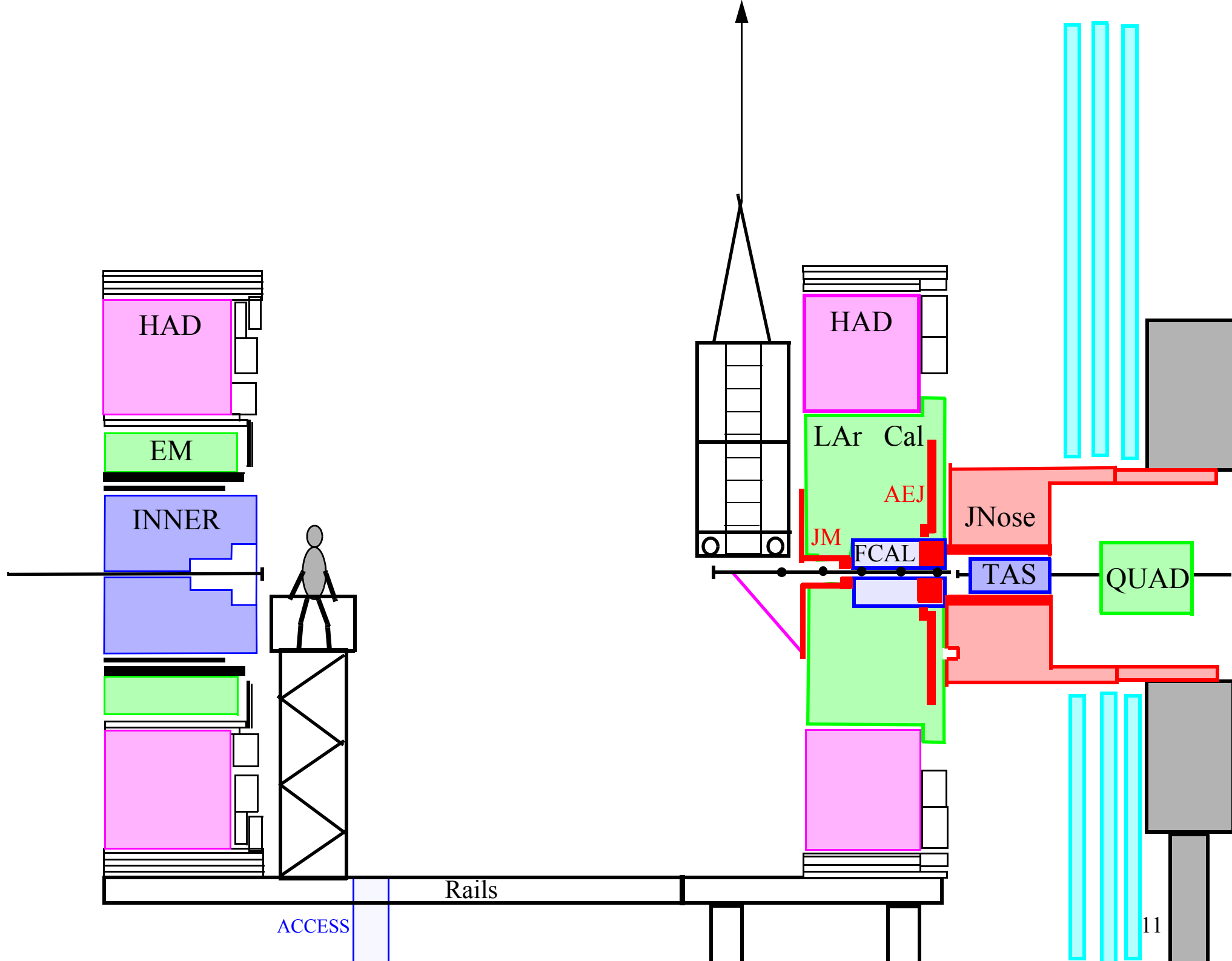


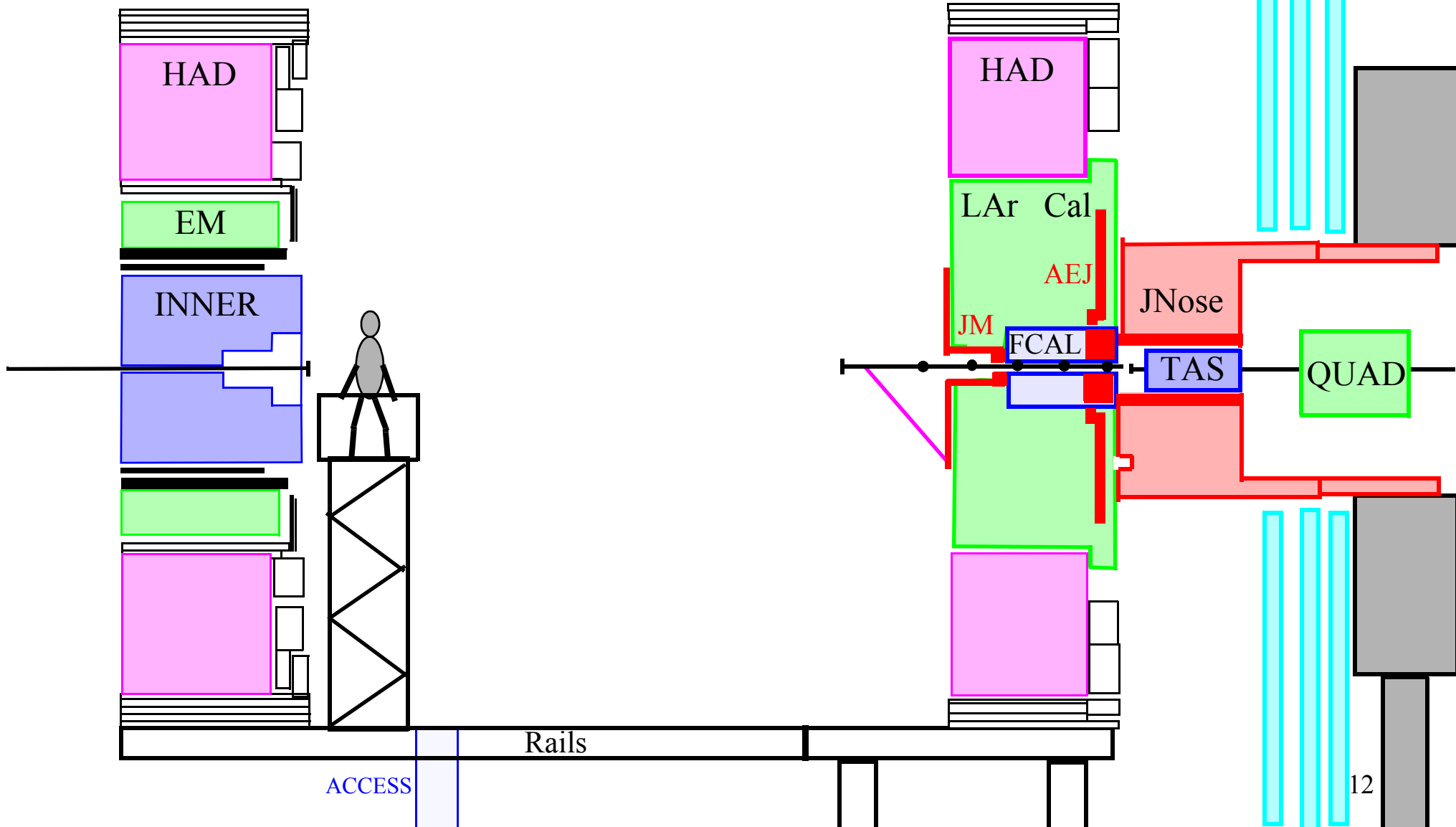




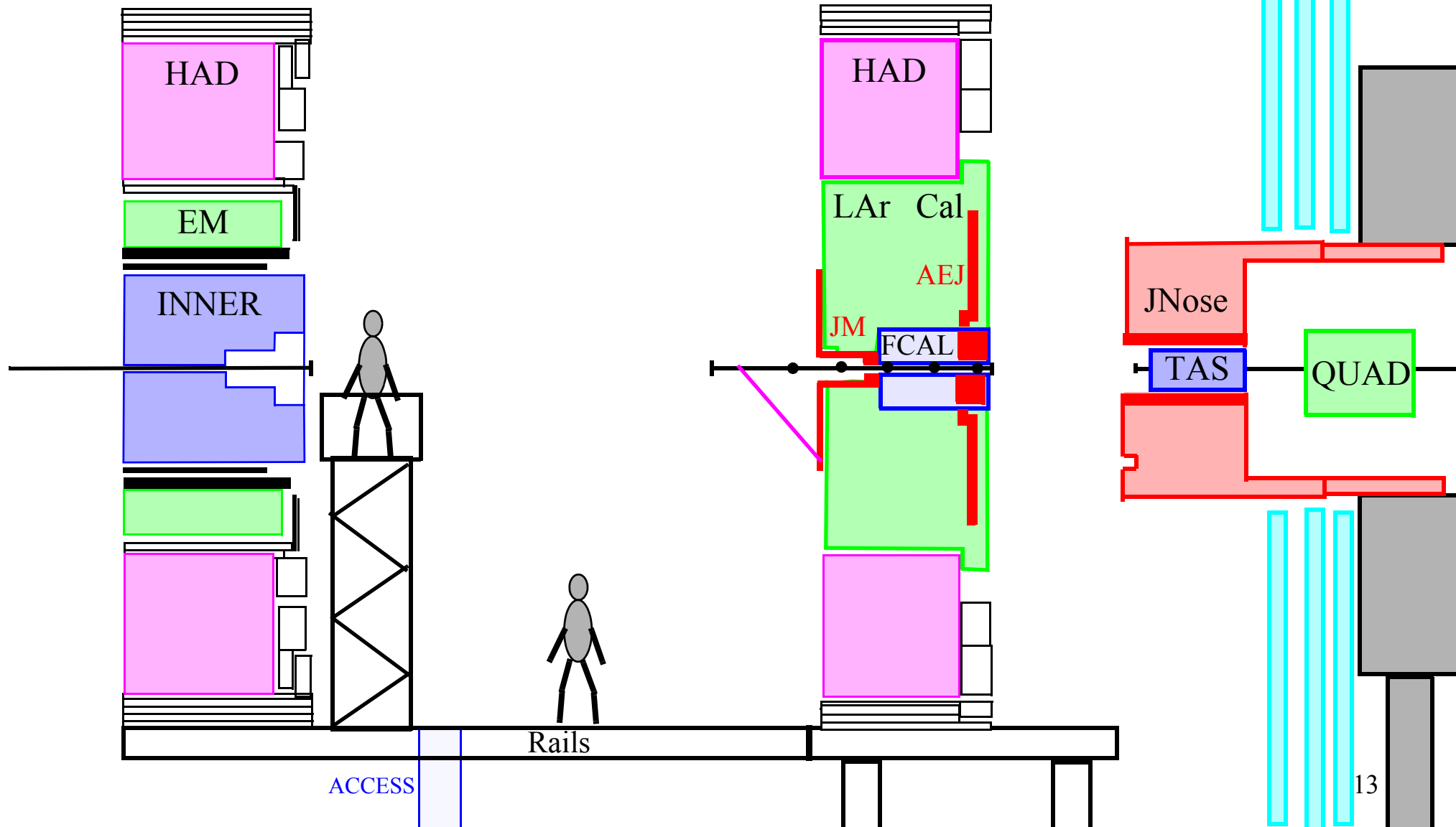
Remove minivans

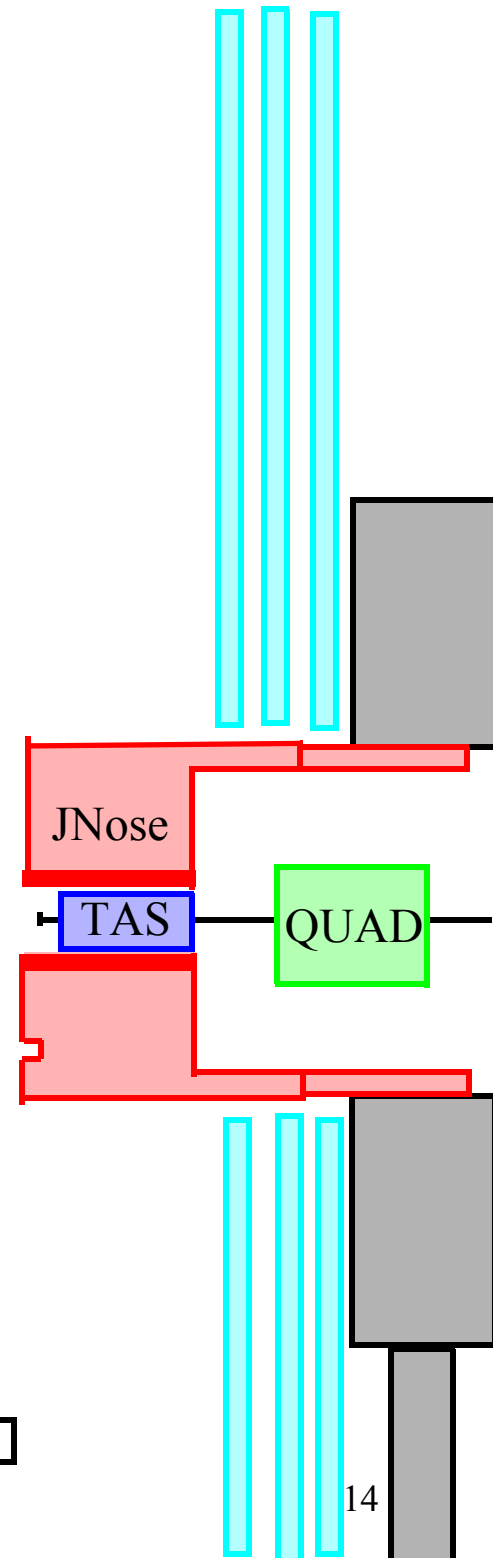
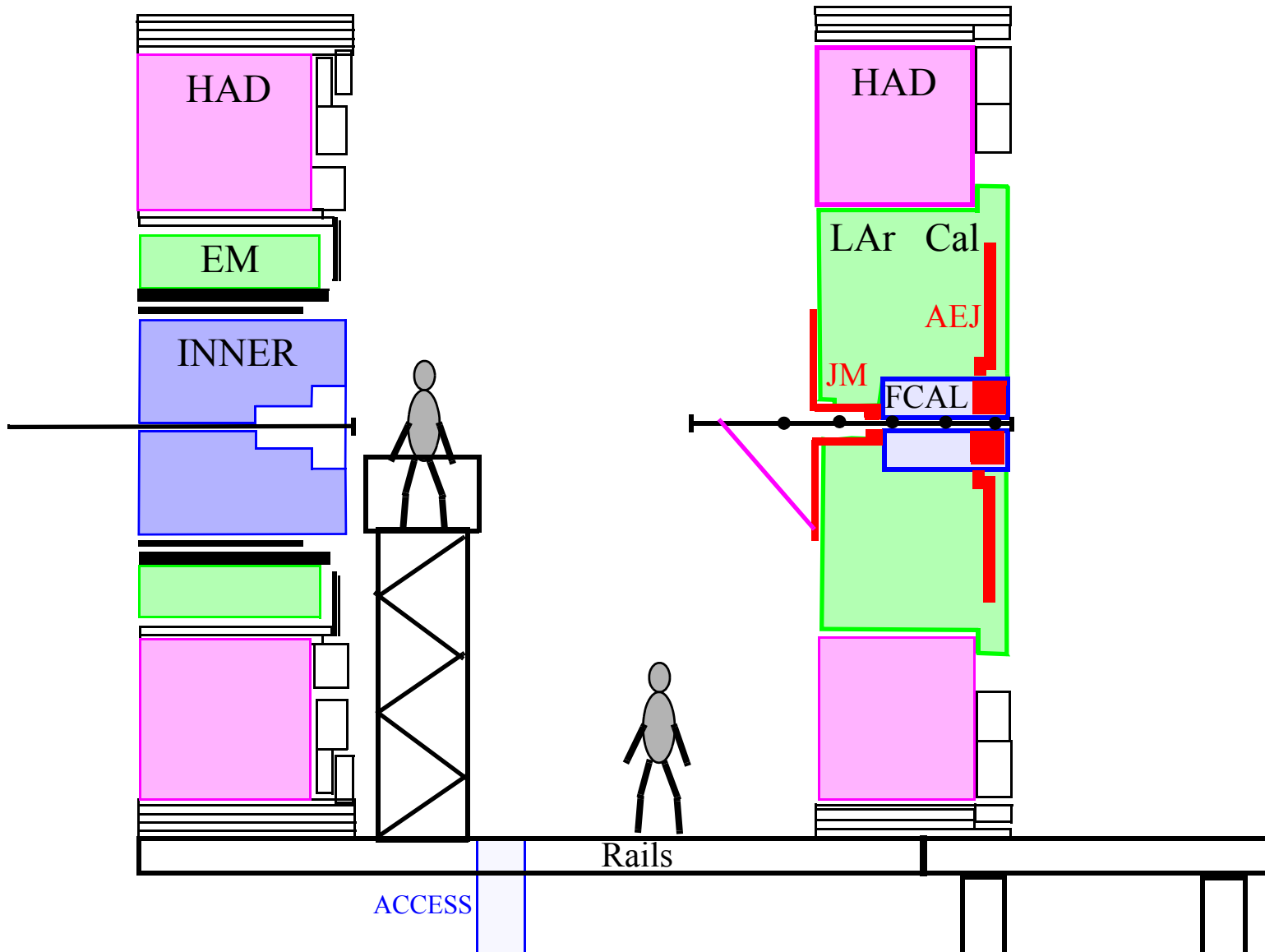


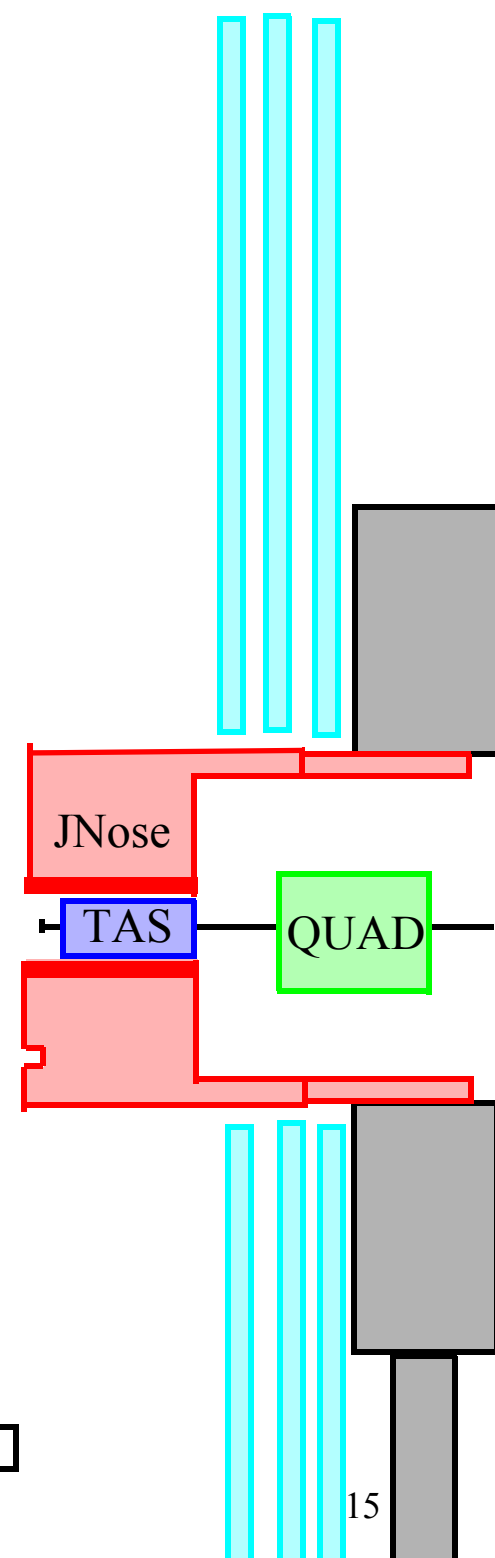
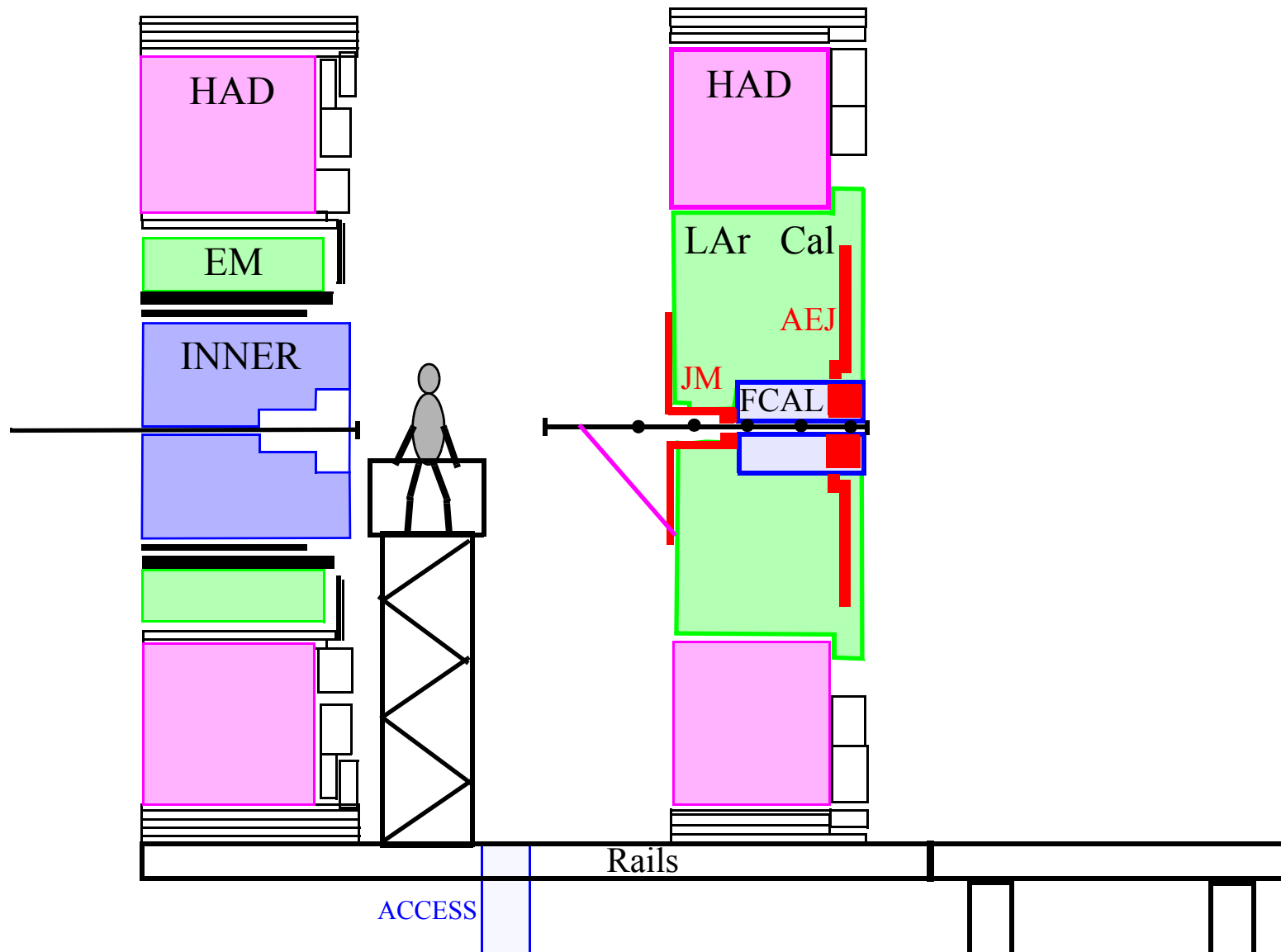


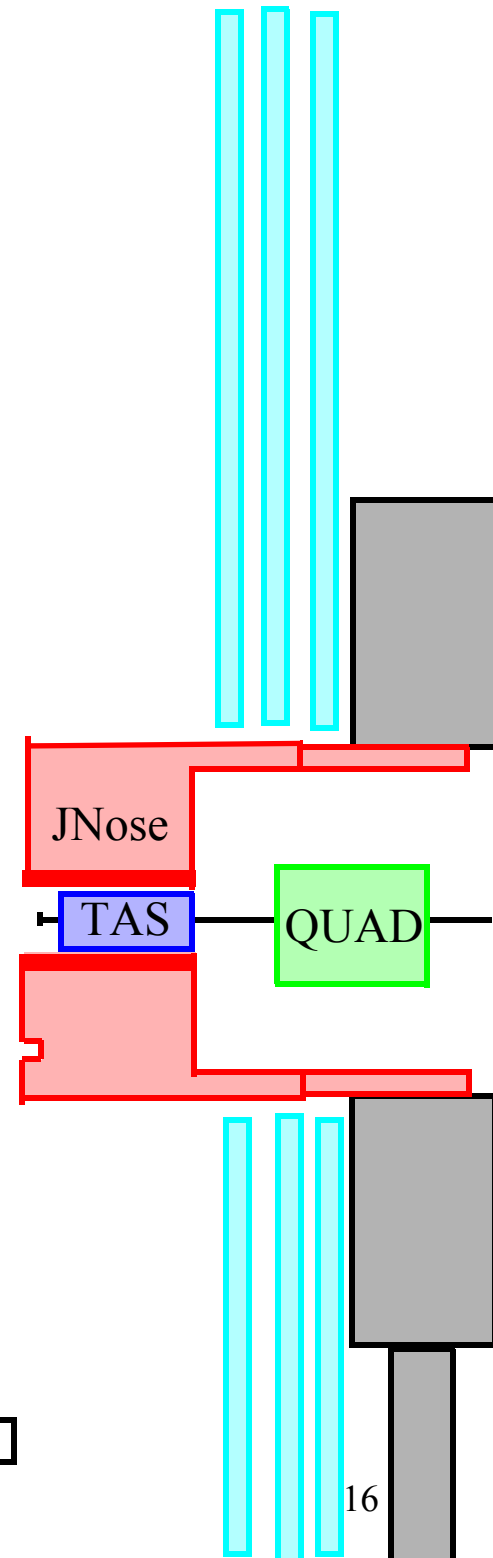
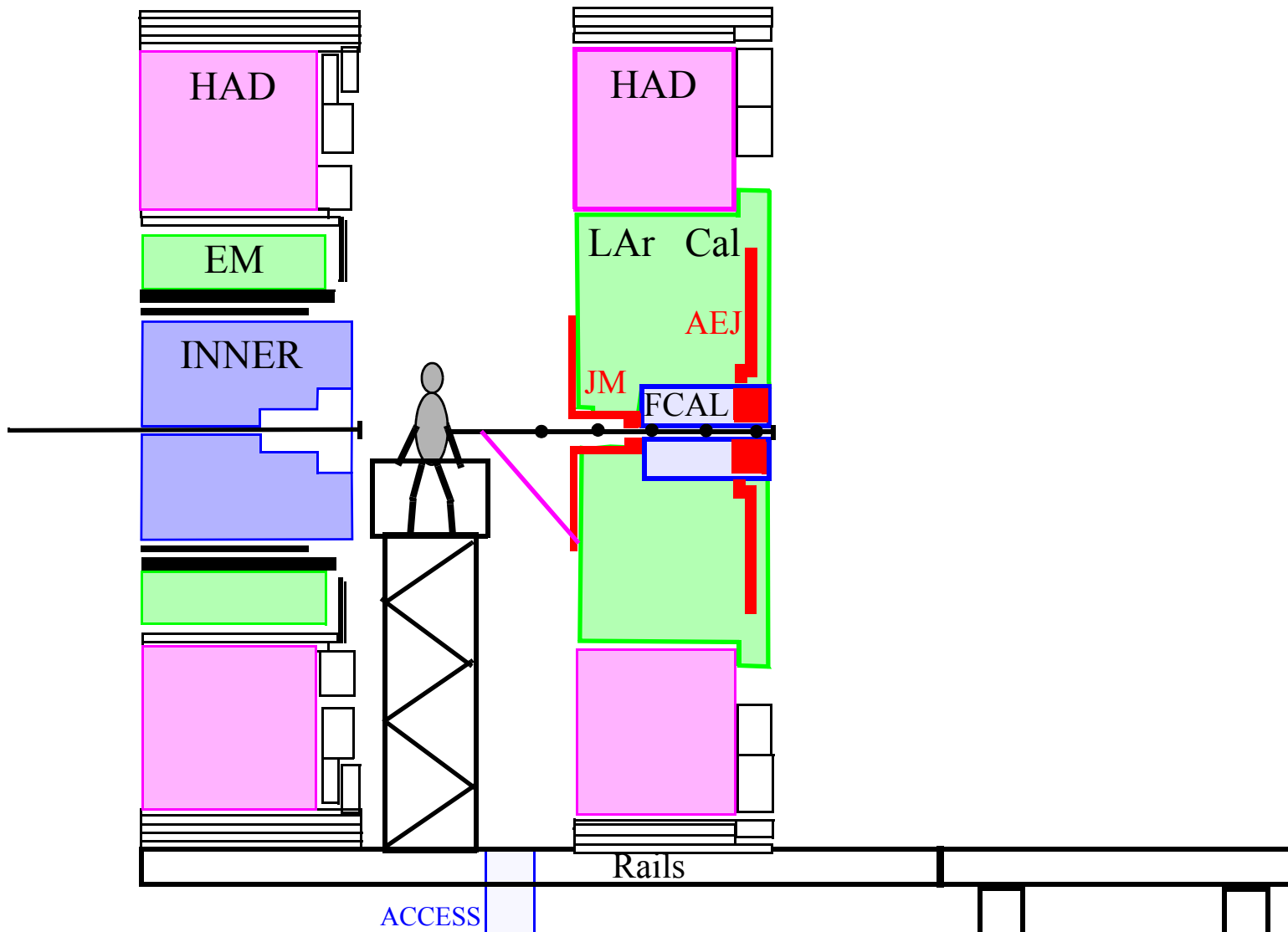


Move calorimeter

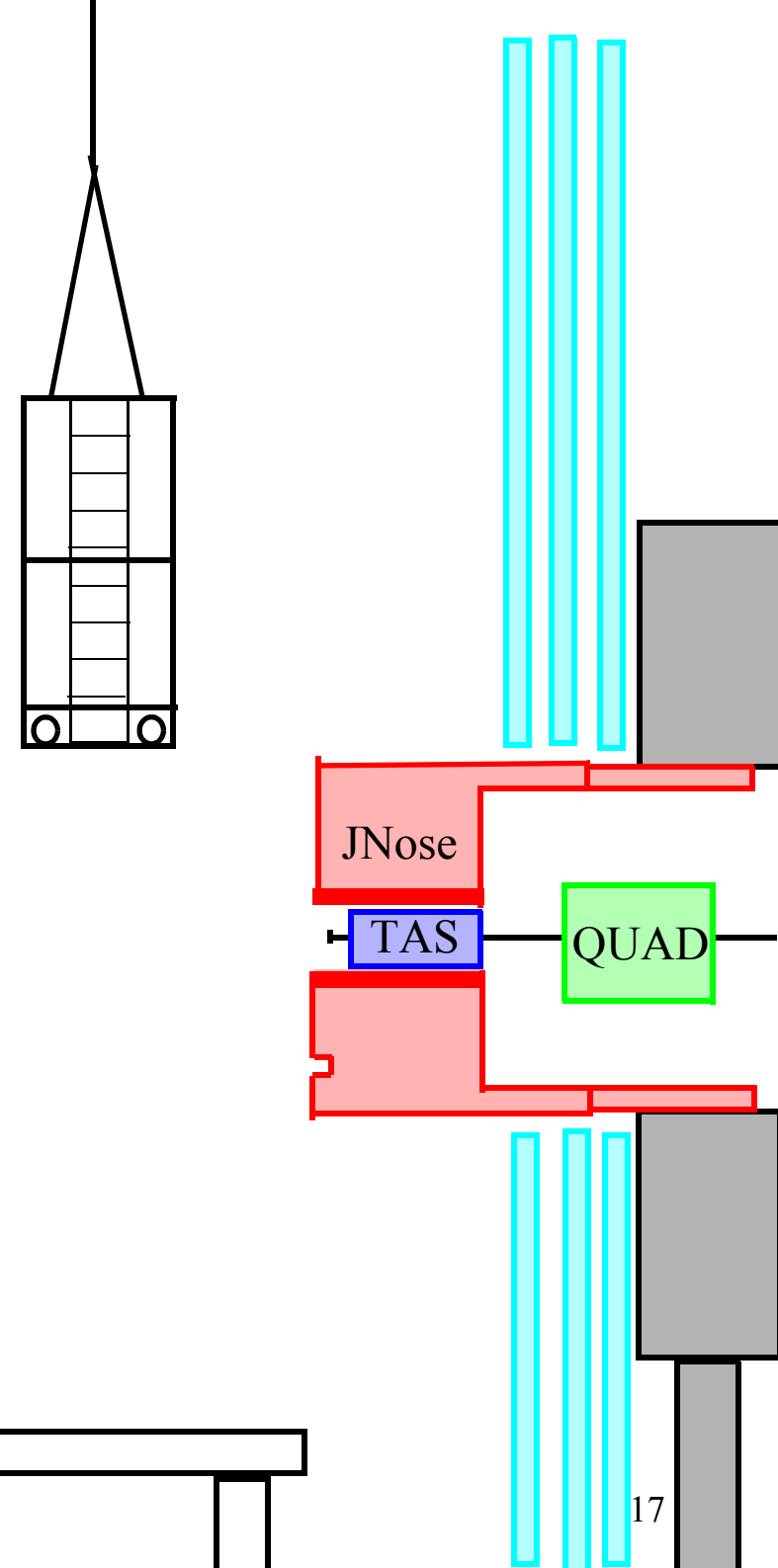
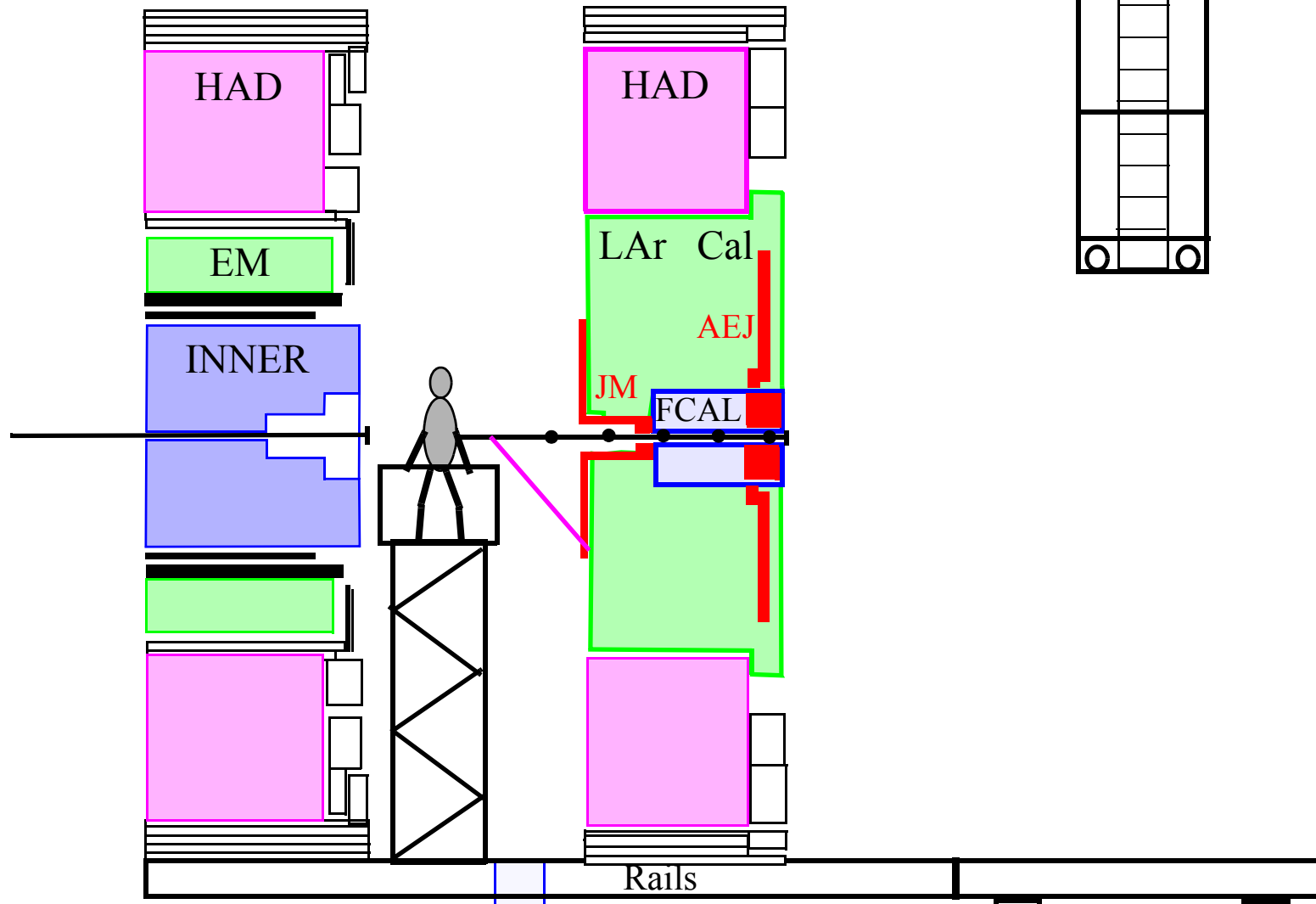


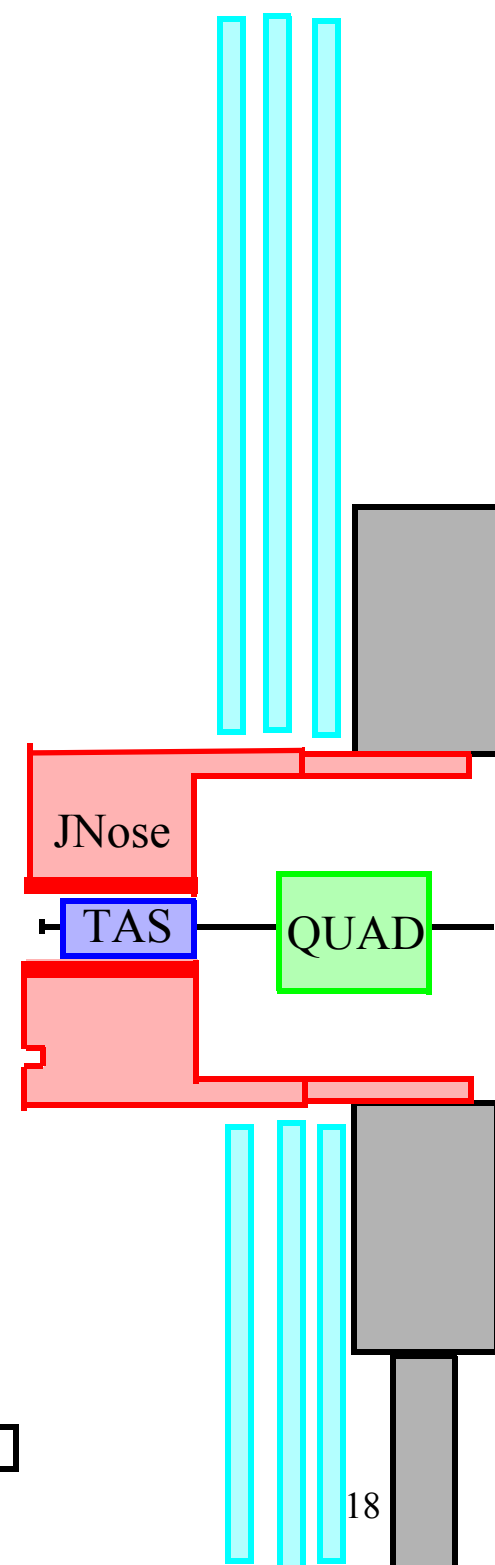
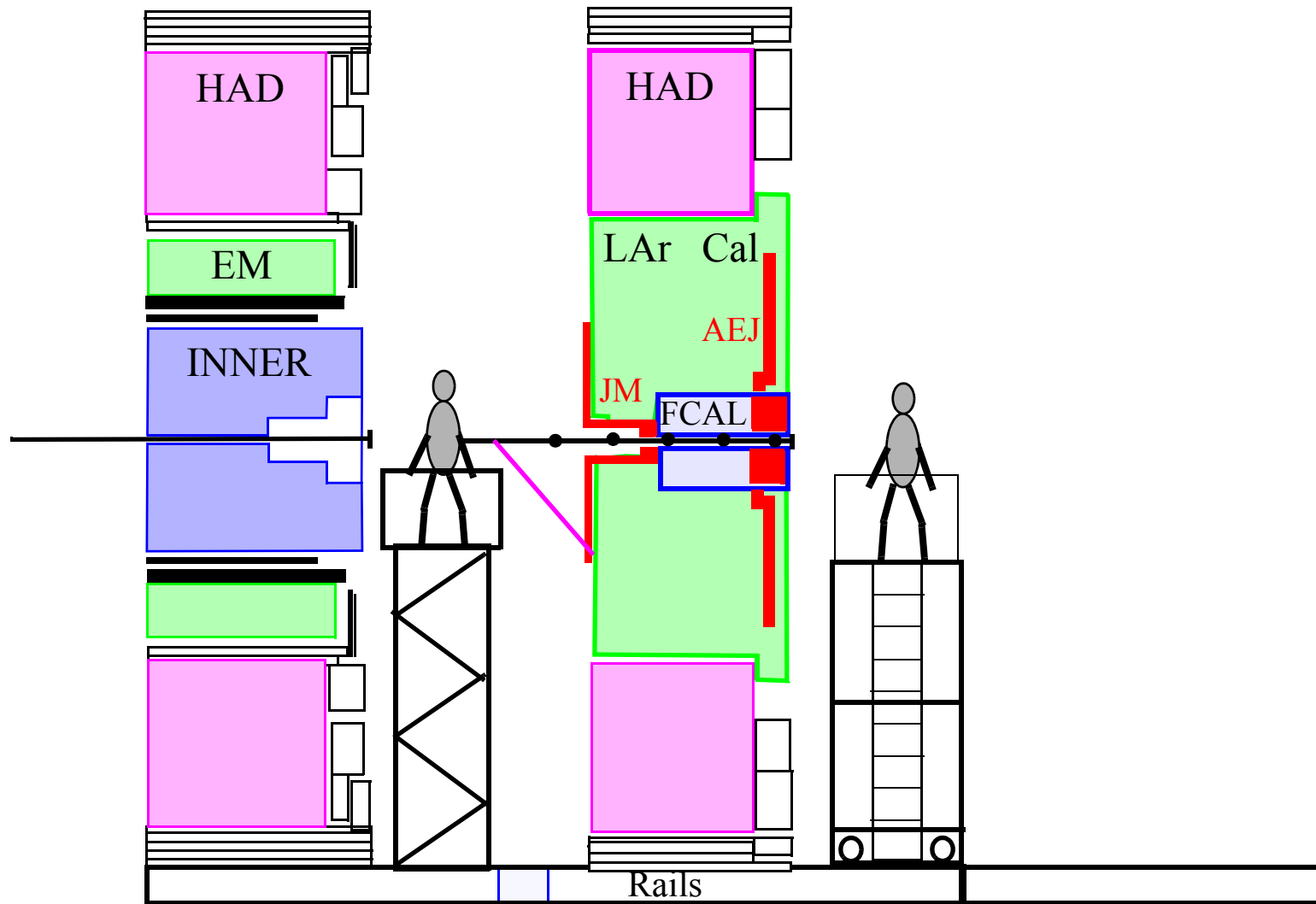


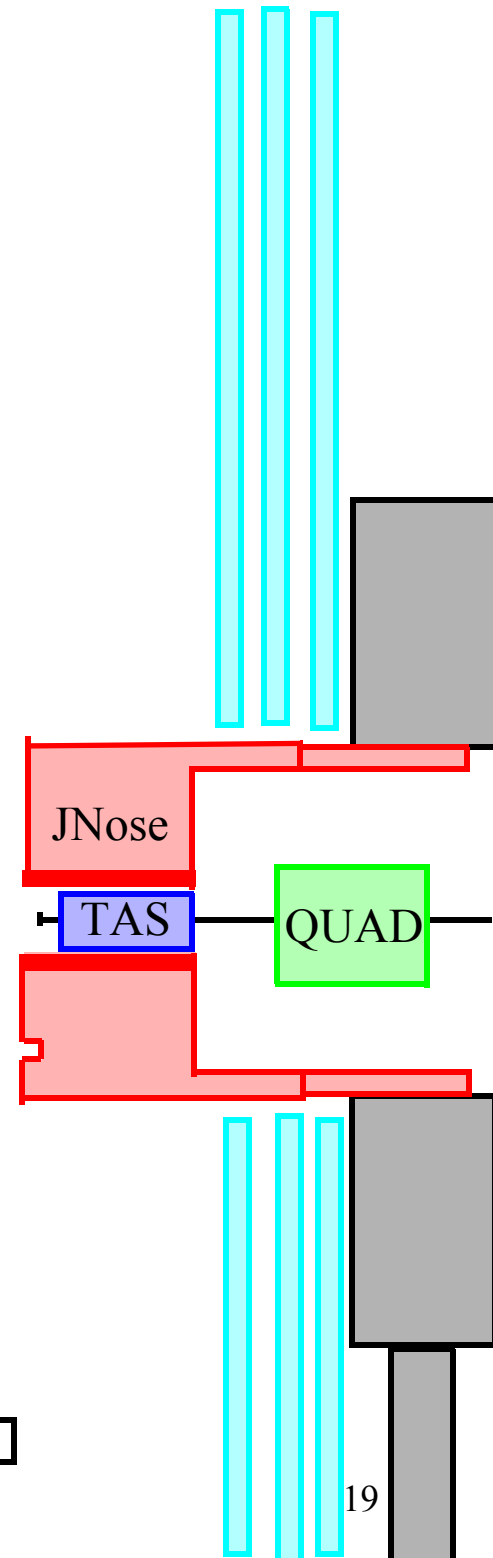
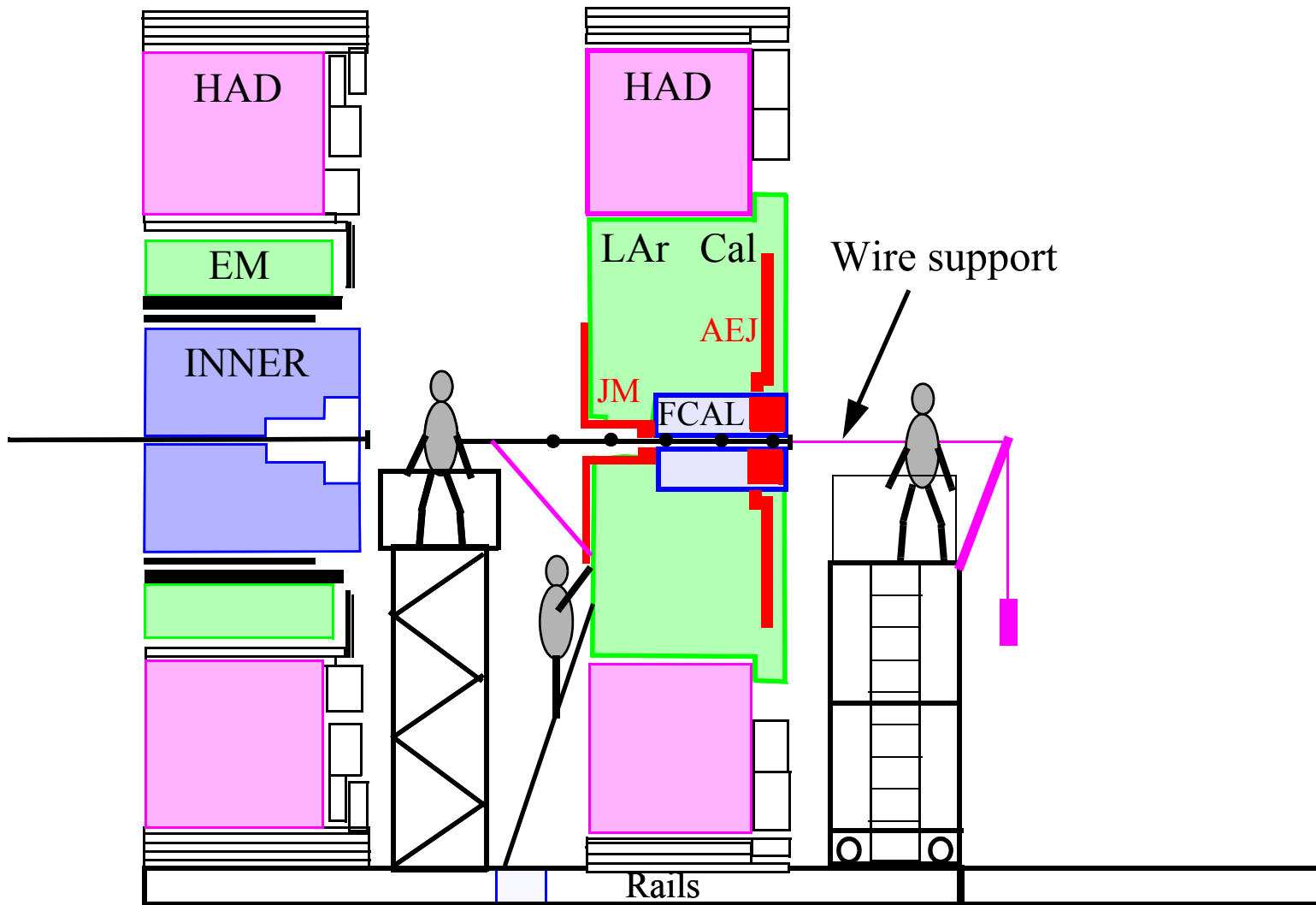


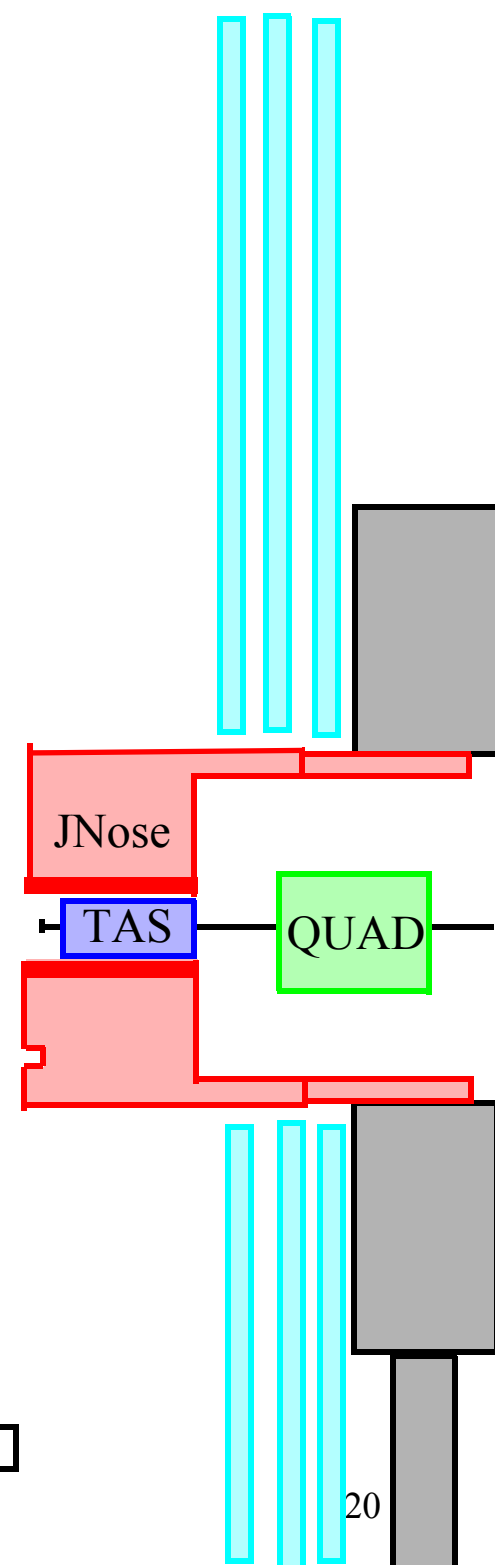
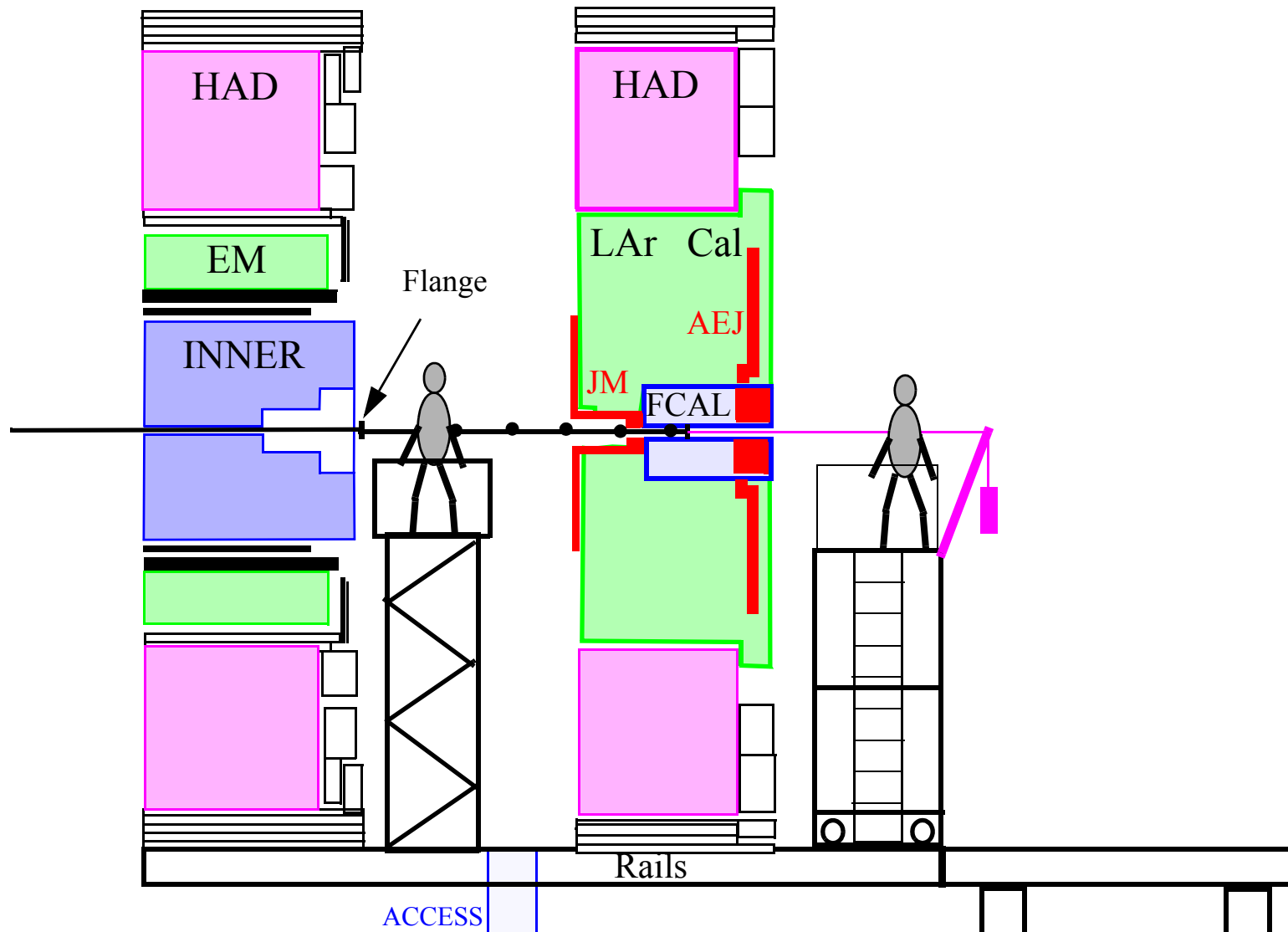


Install minivans

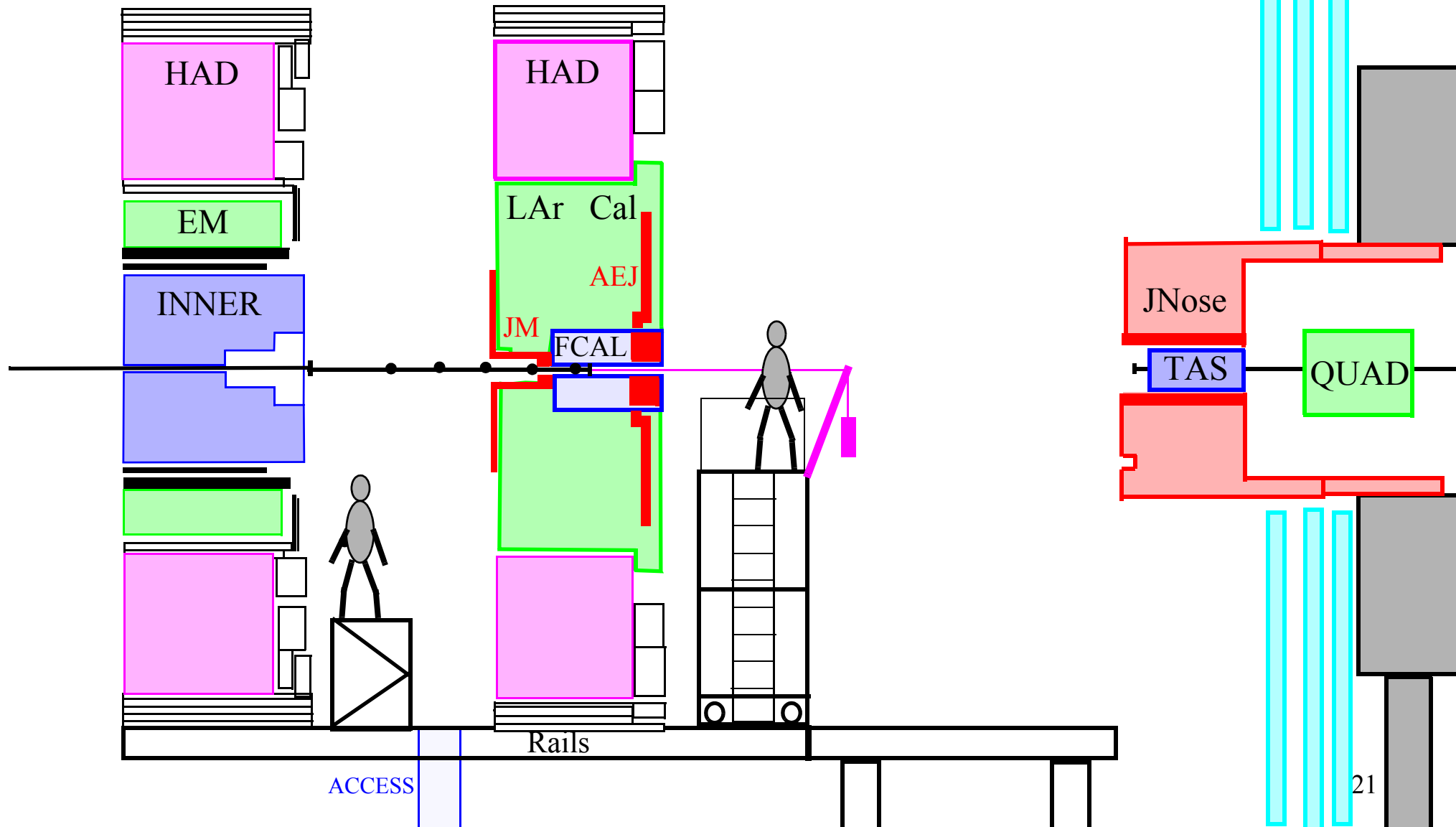


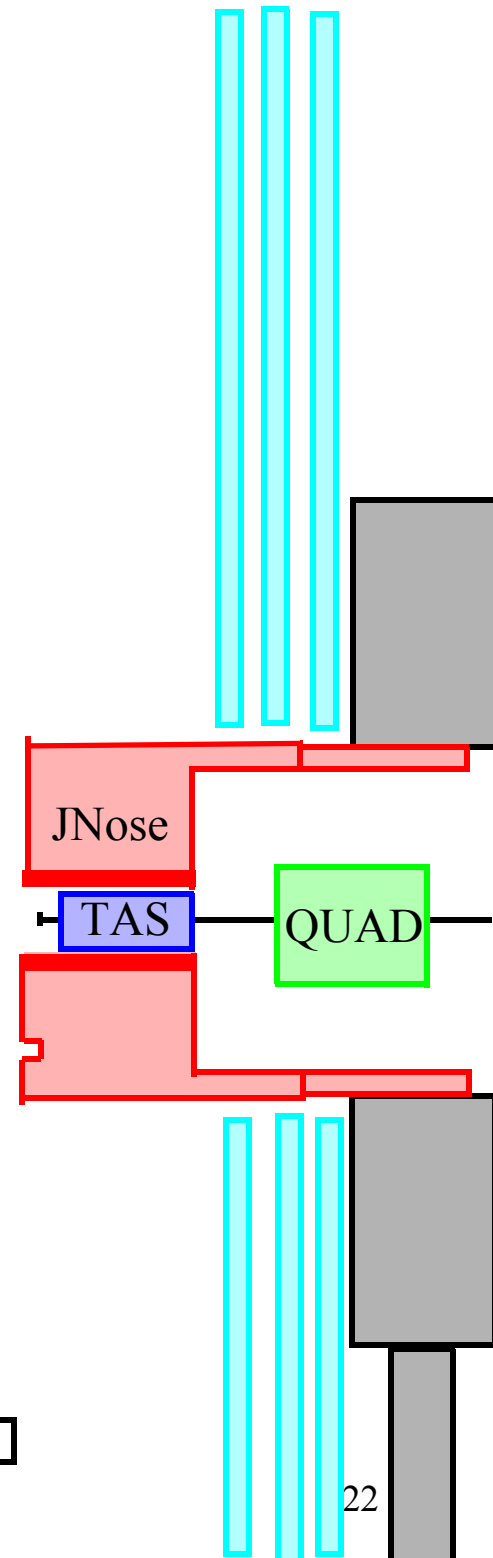
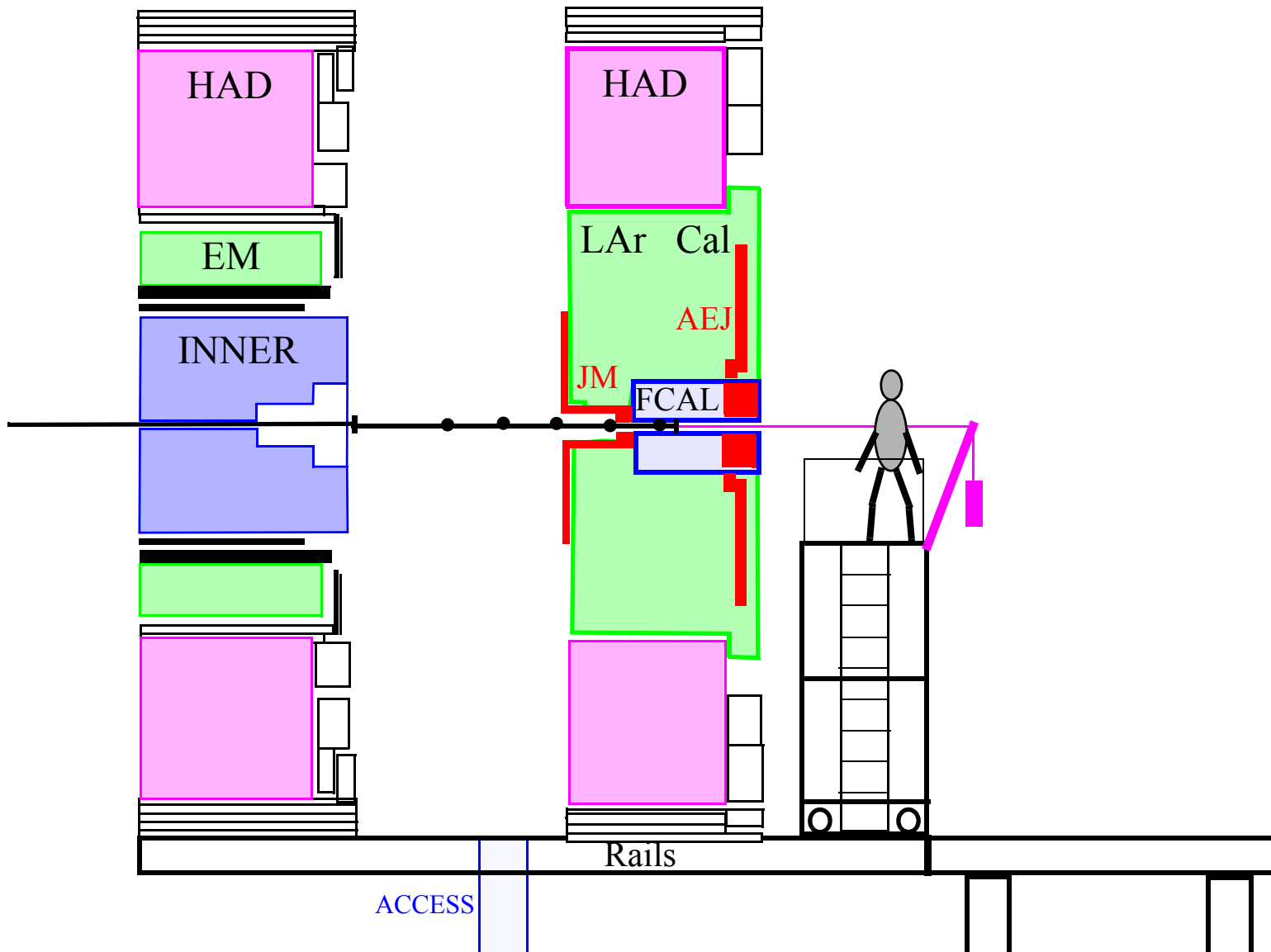




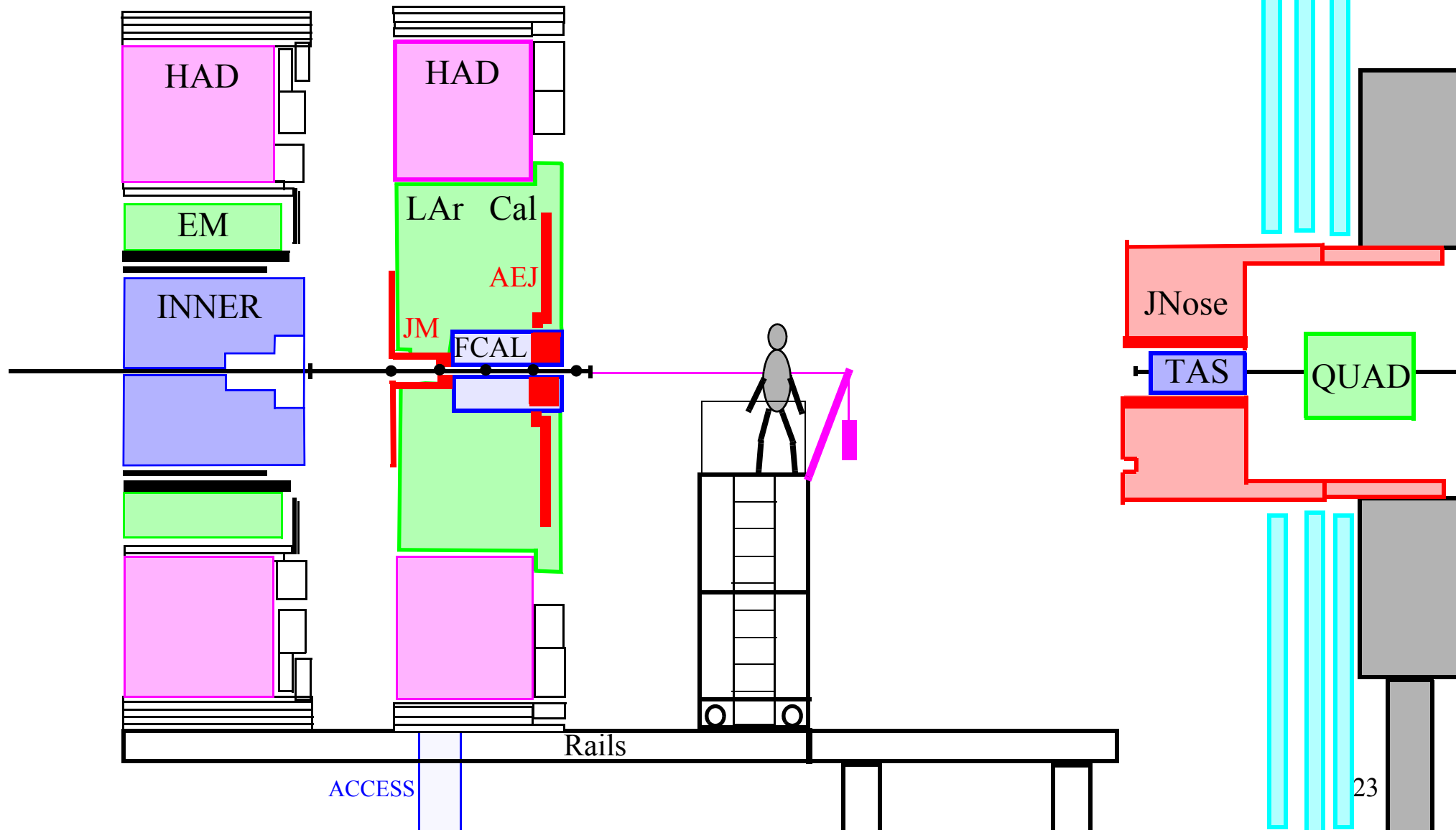


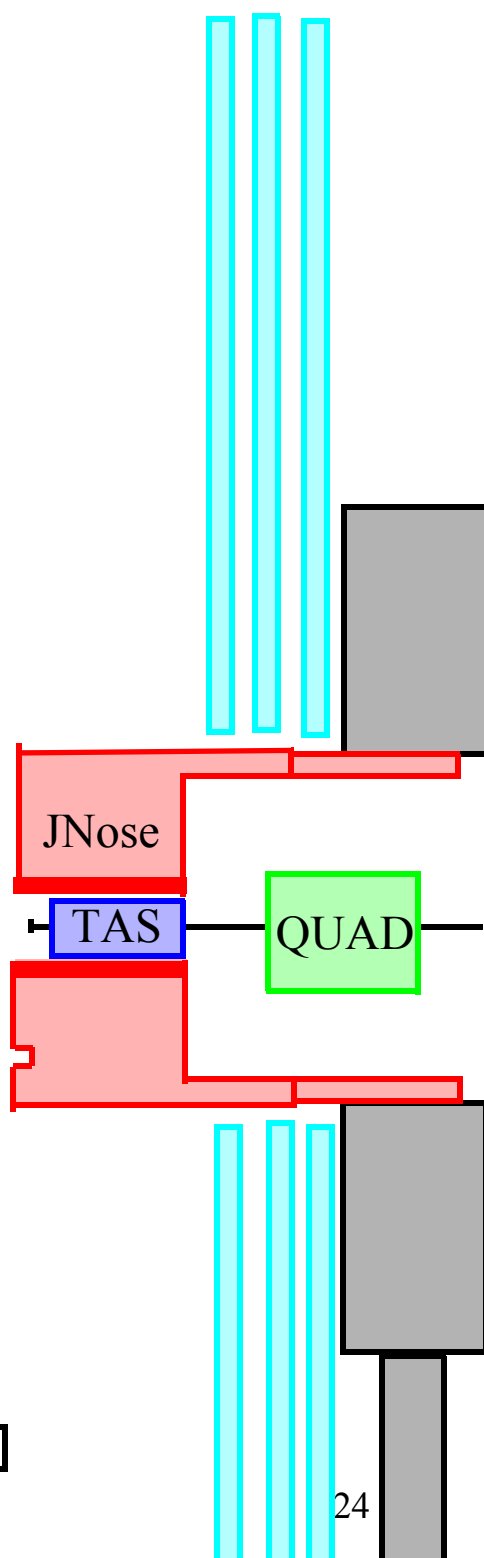
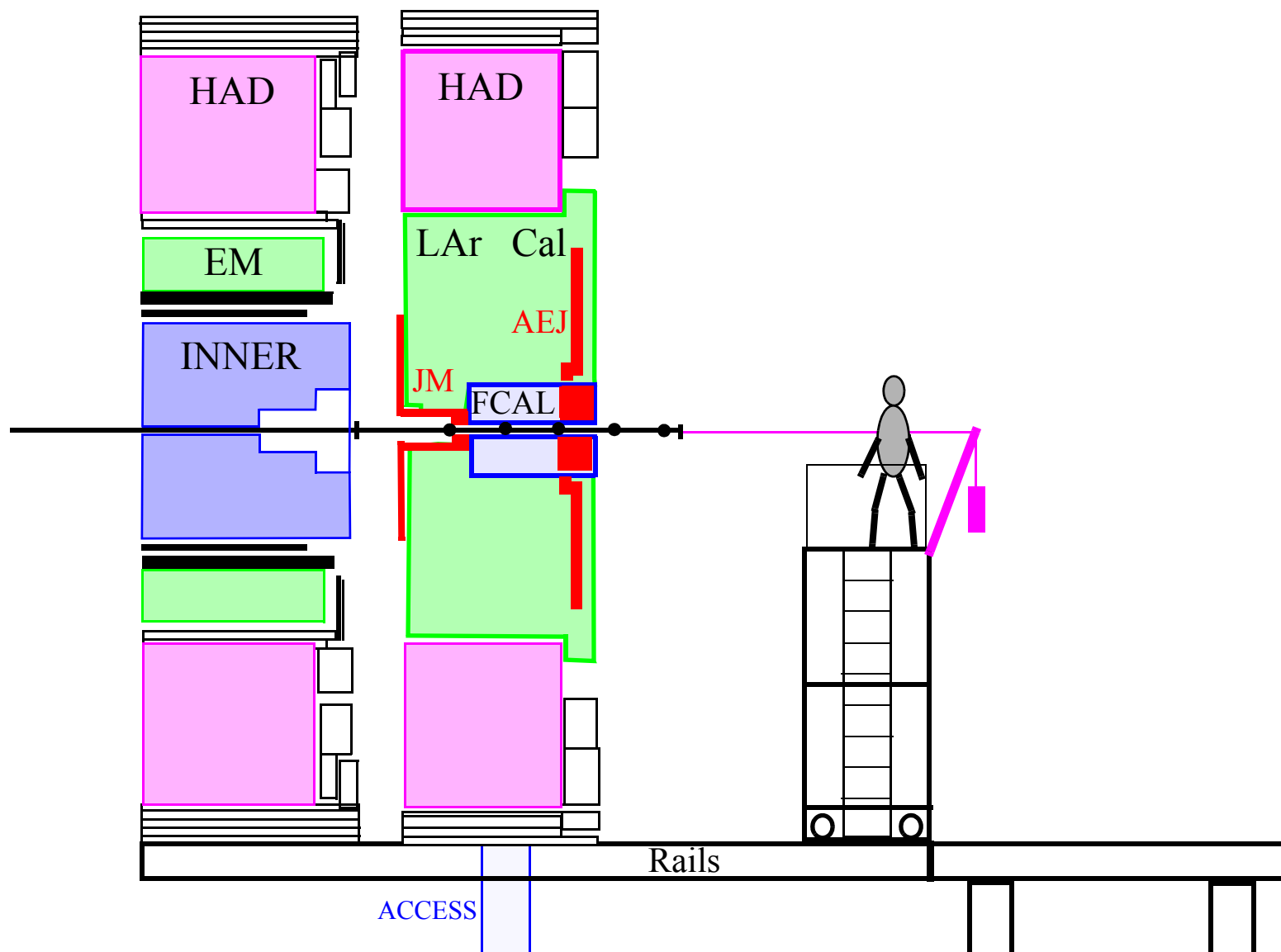
Remove scaffolding

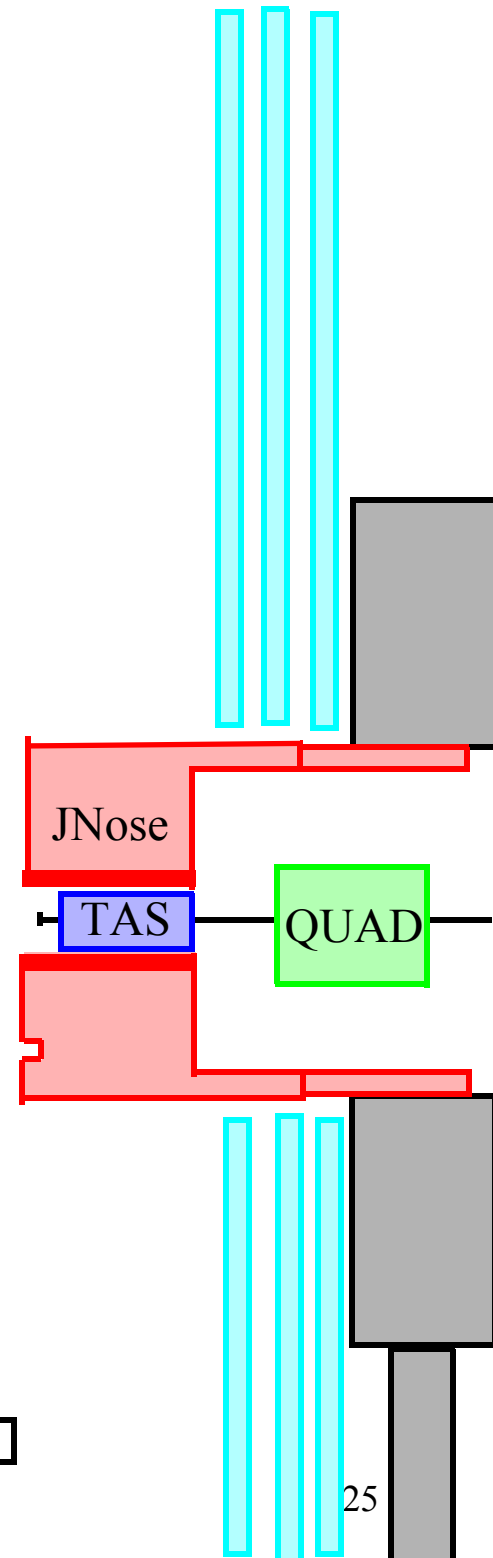
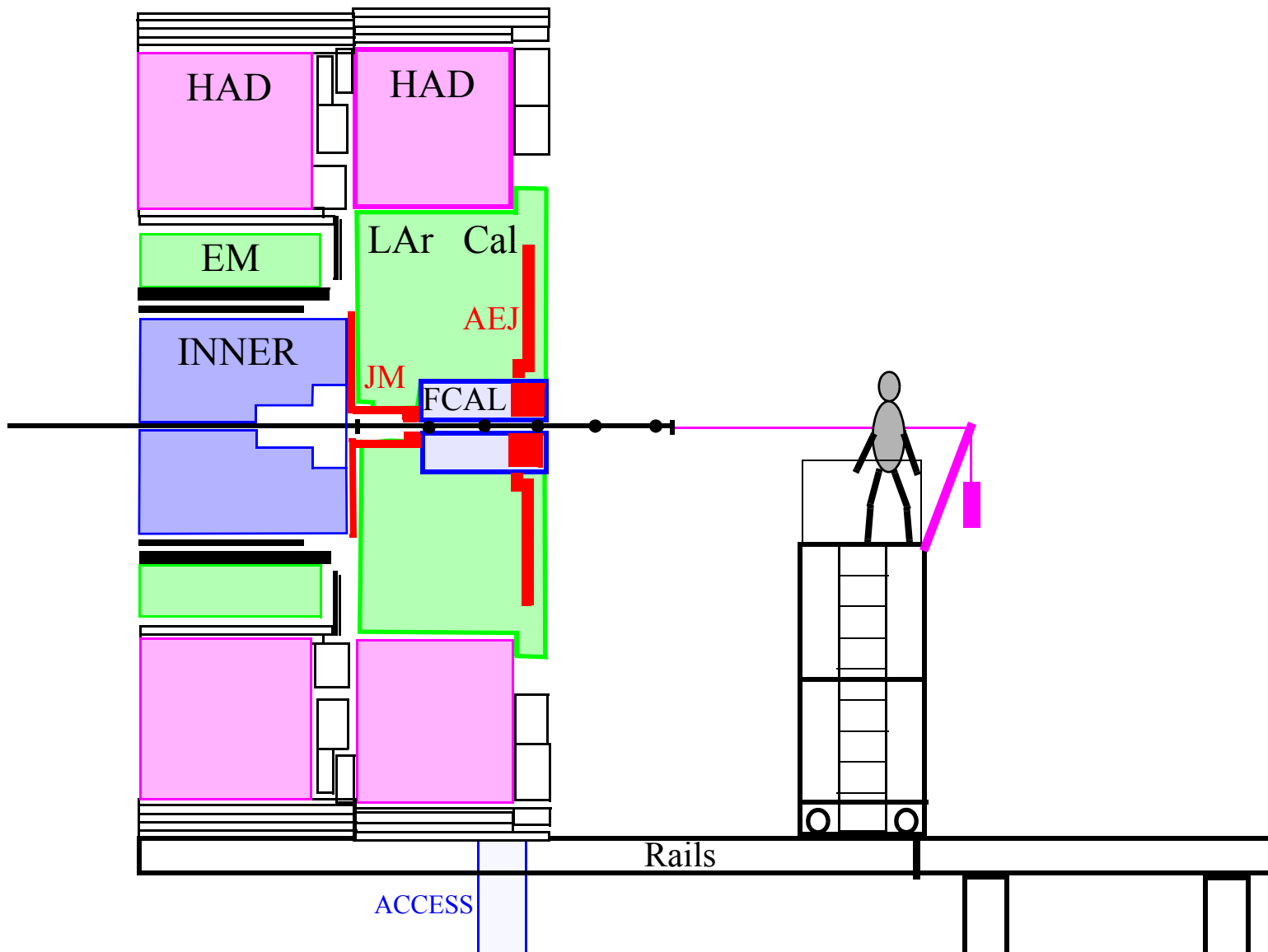


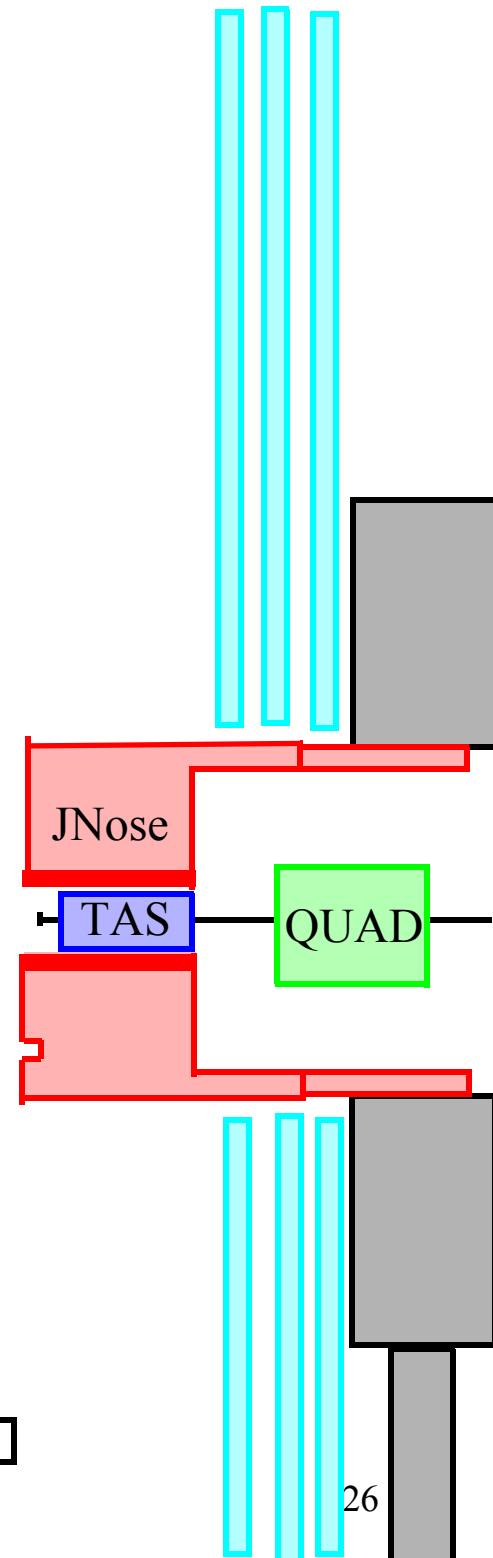
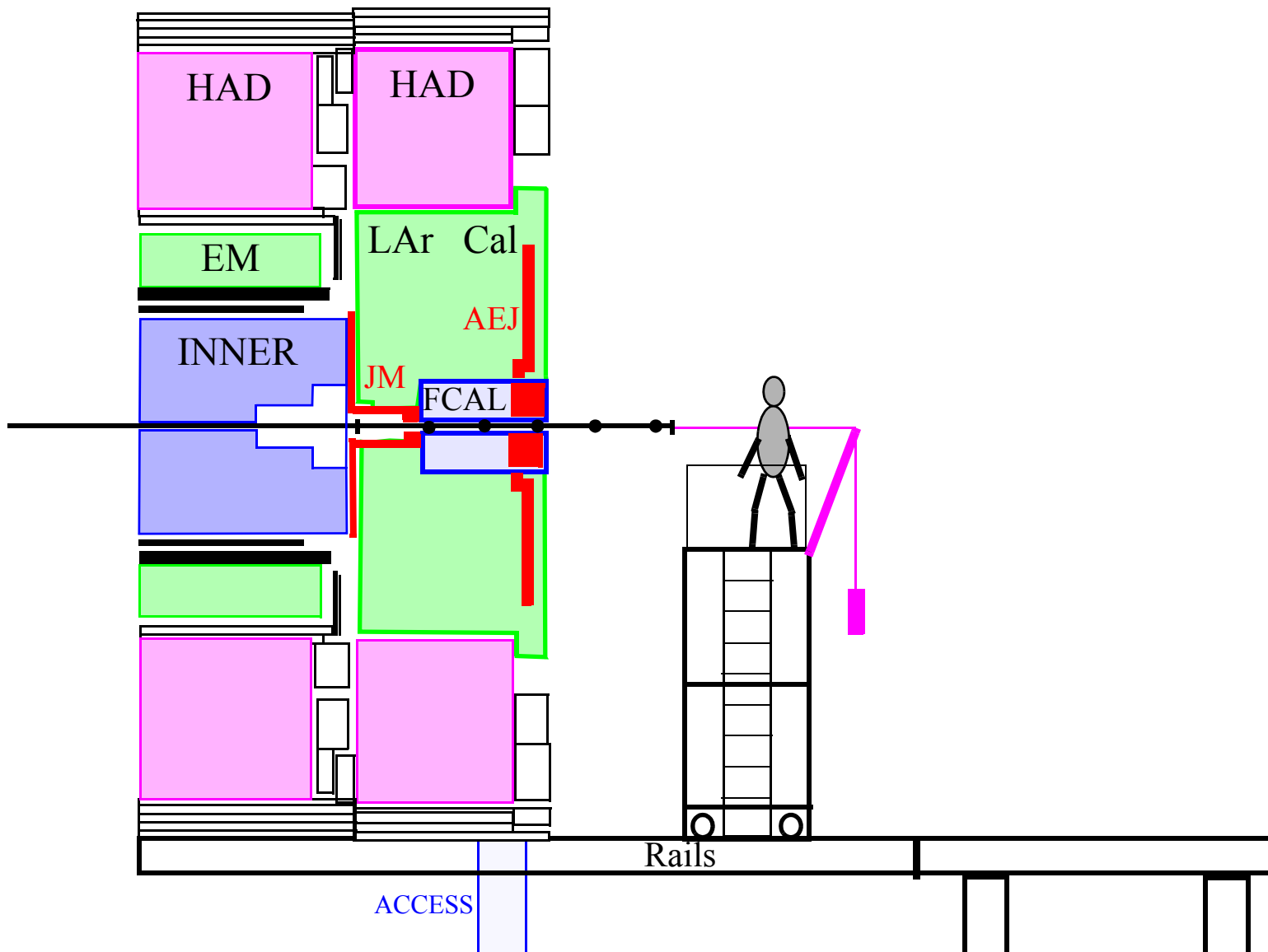


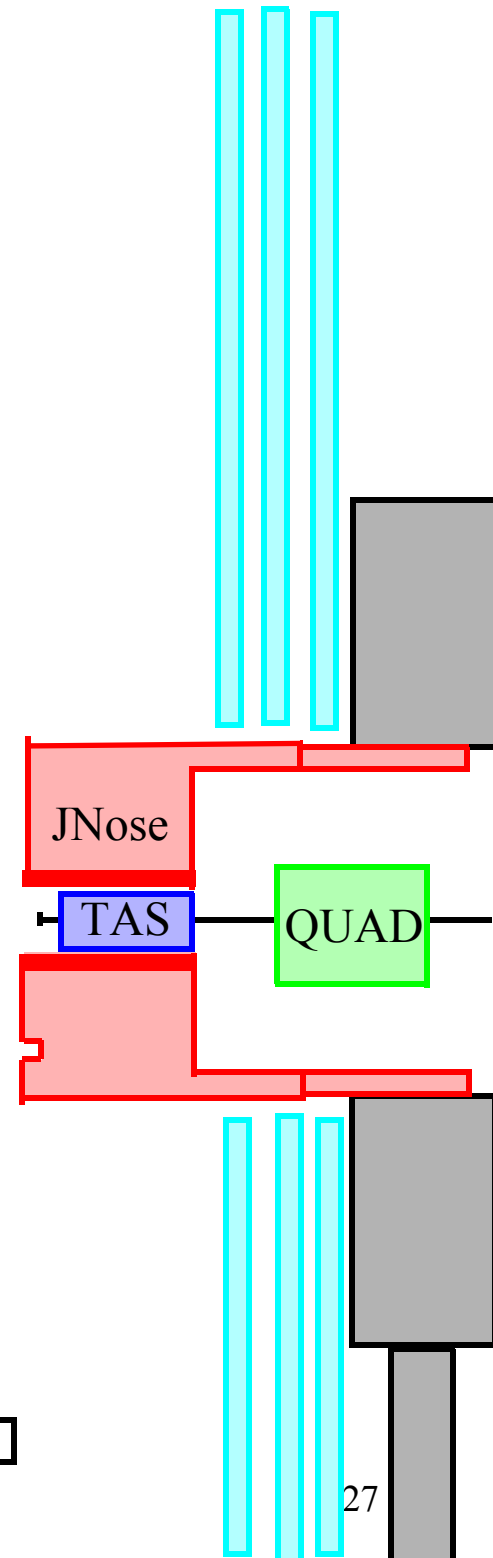
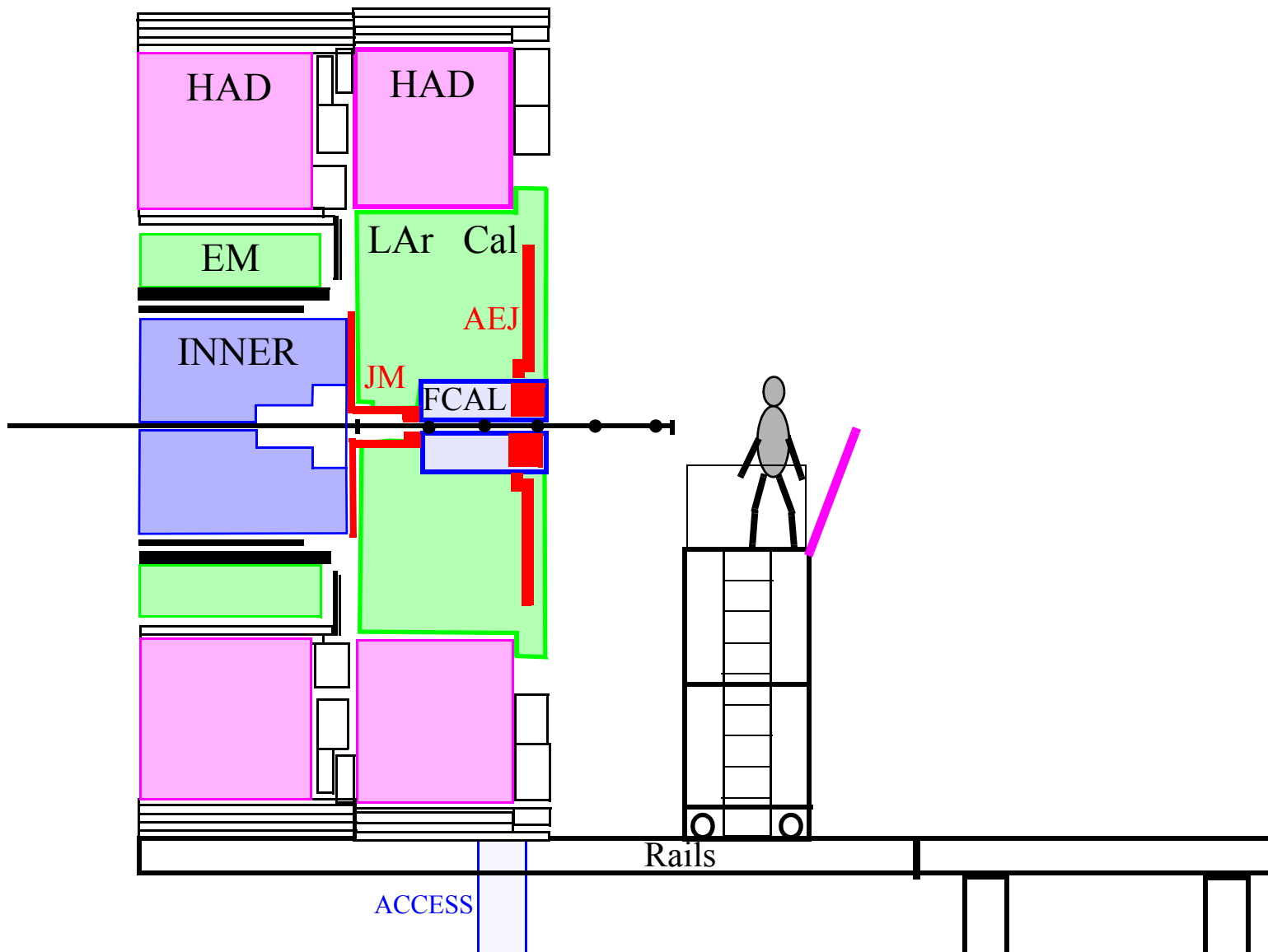
Move calorimeter.

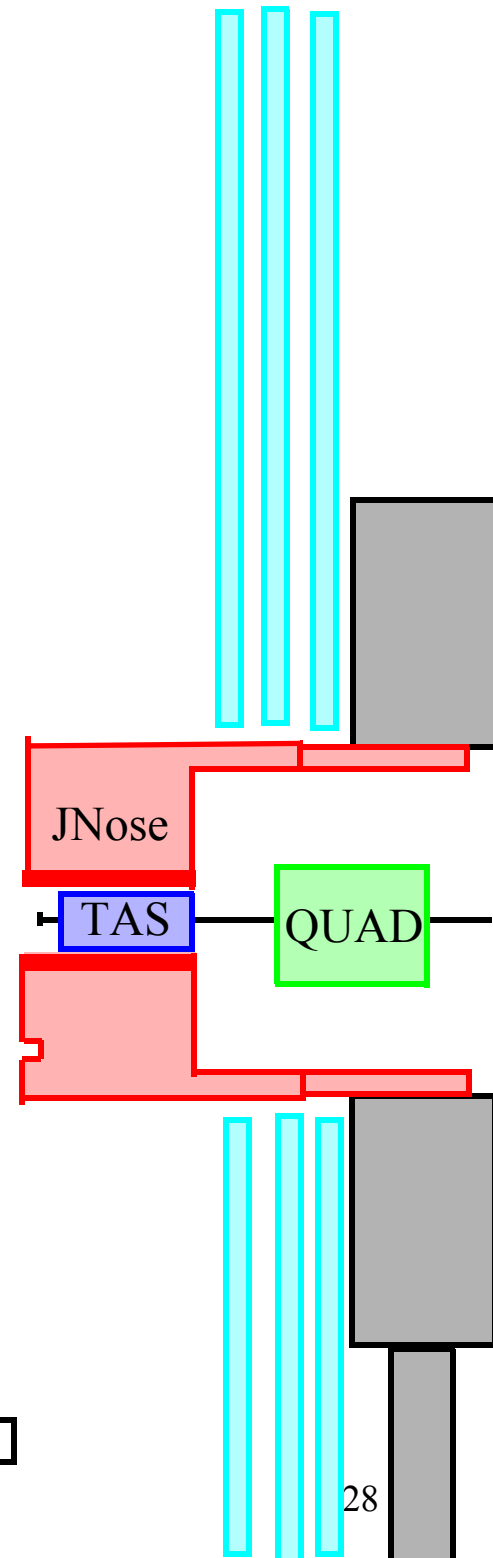
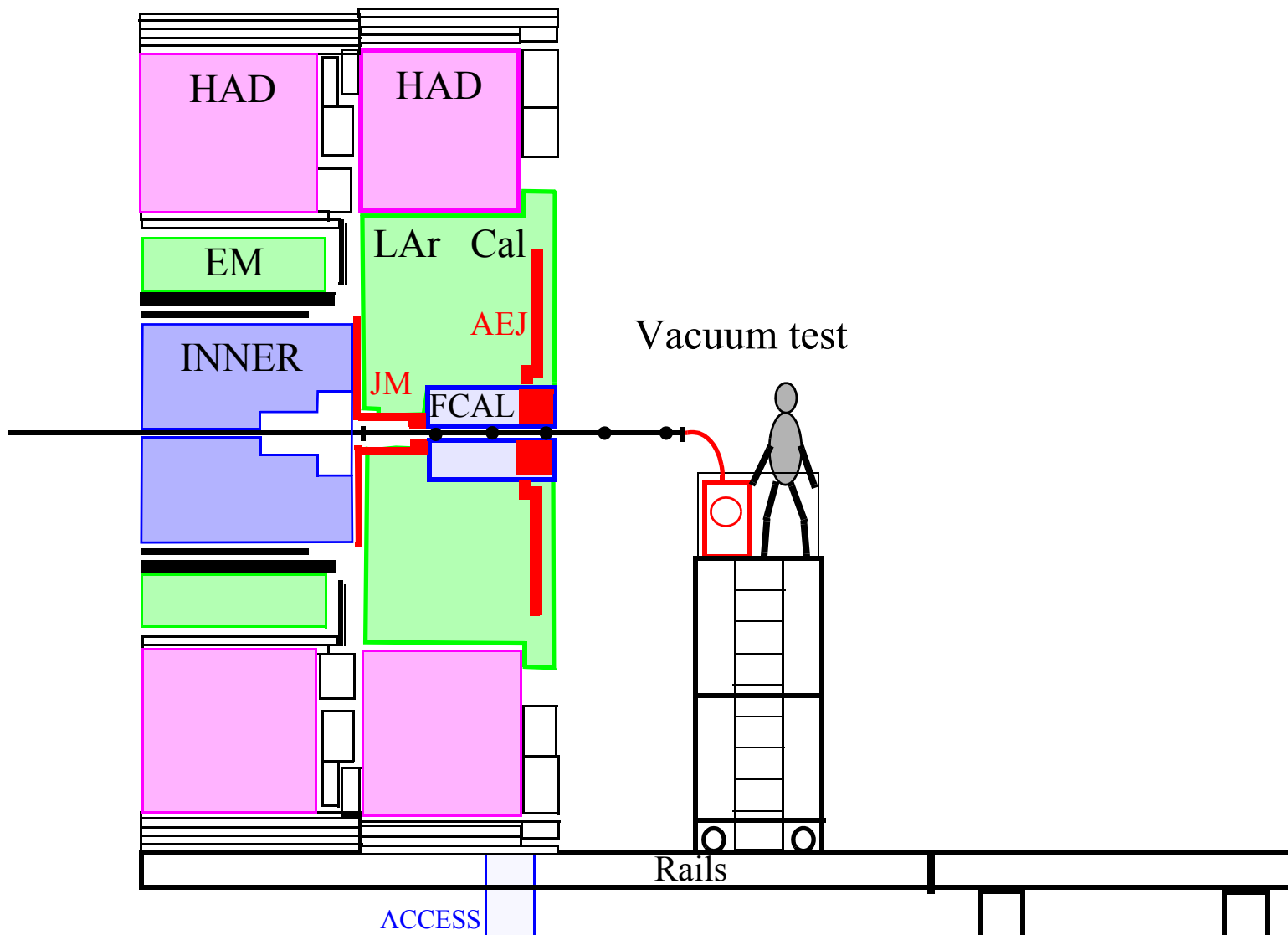


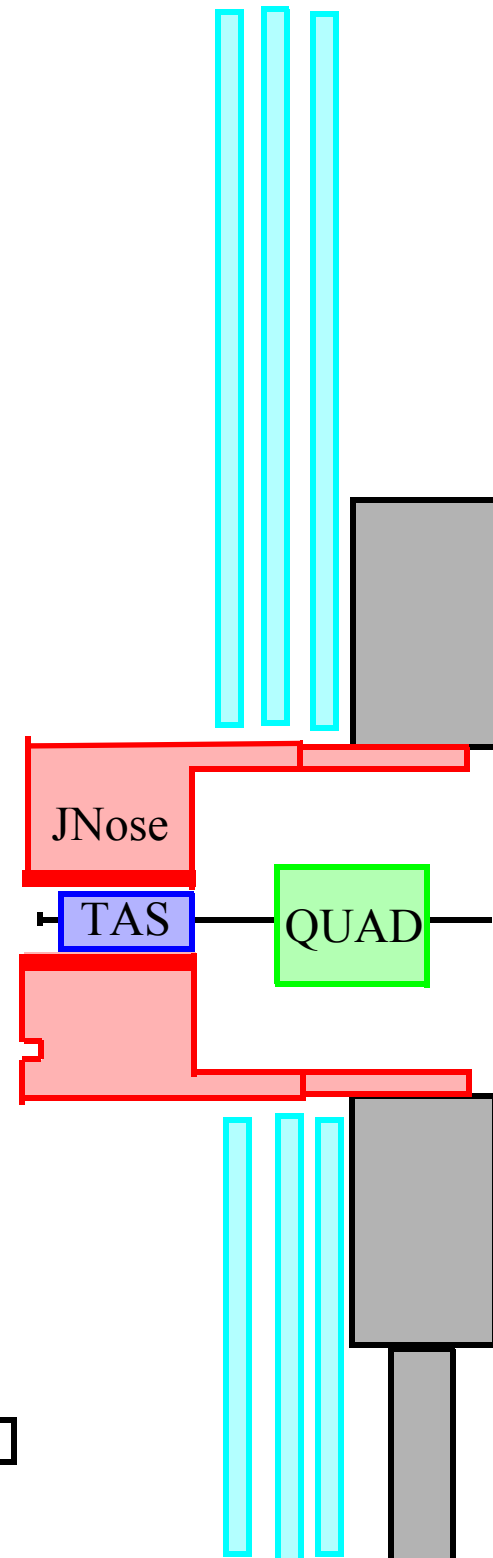
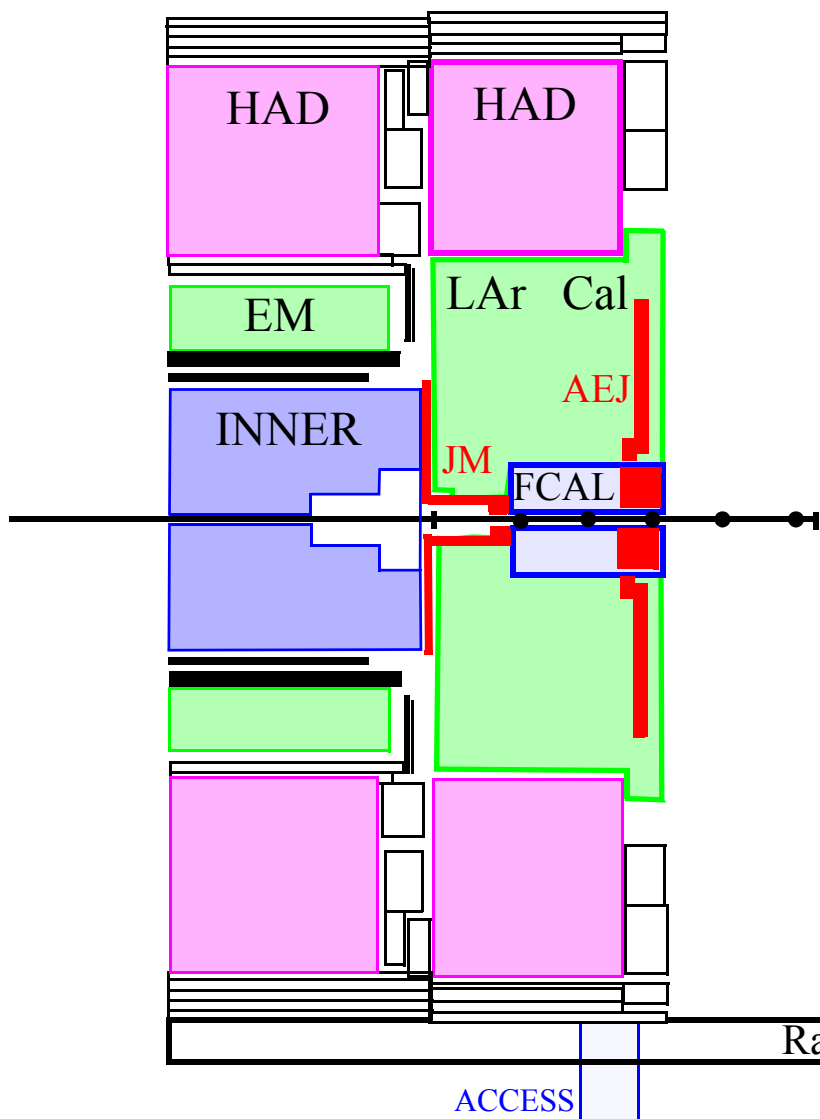


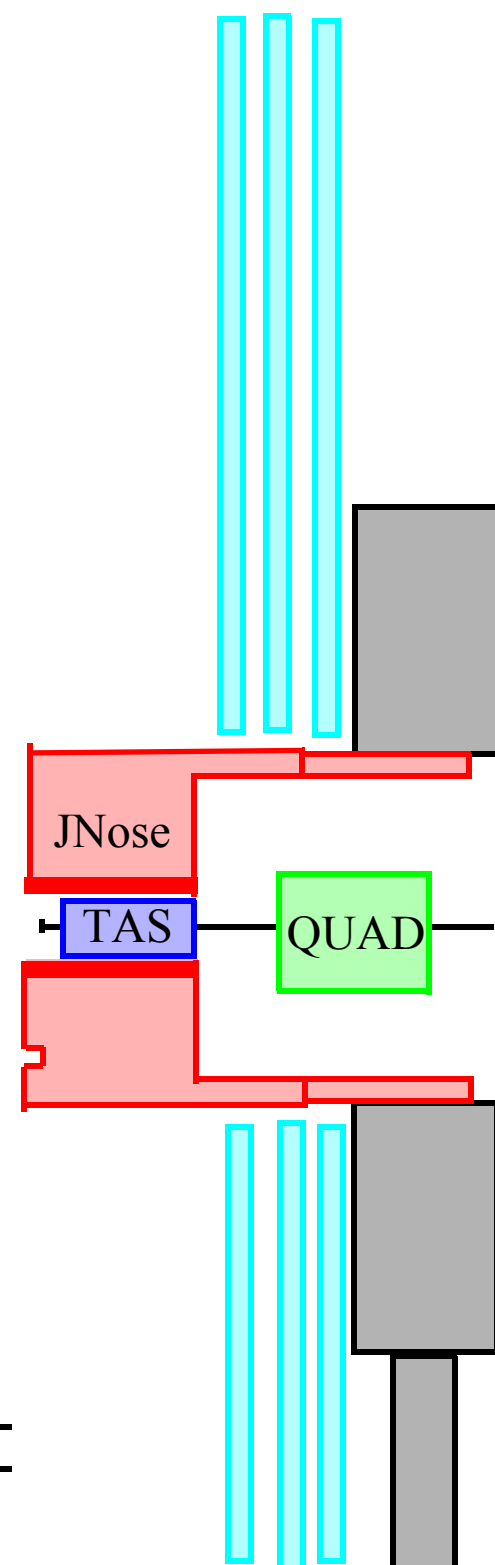
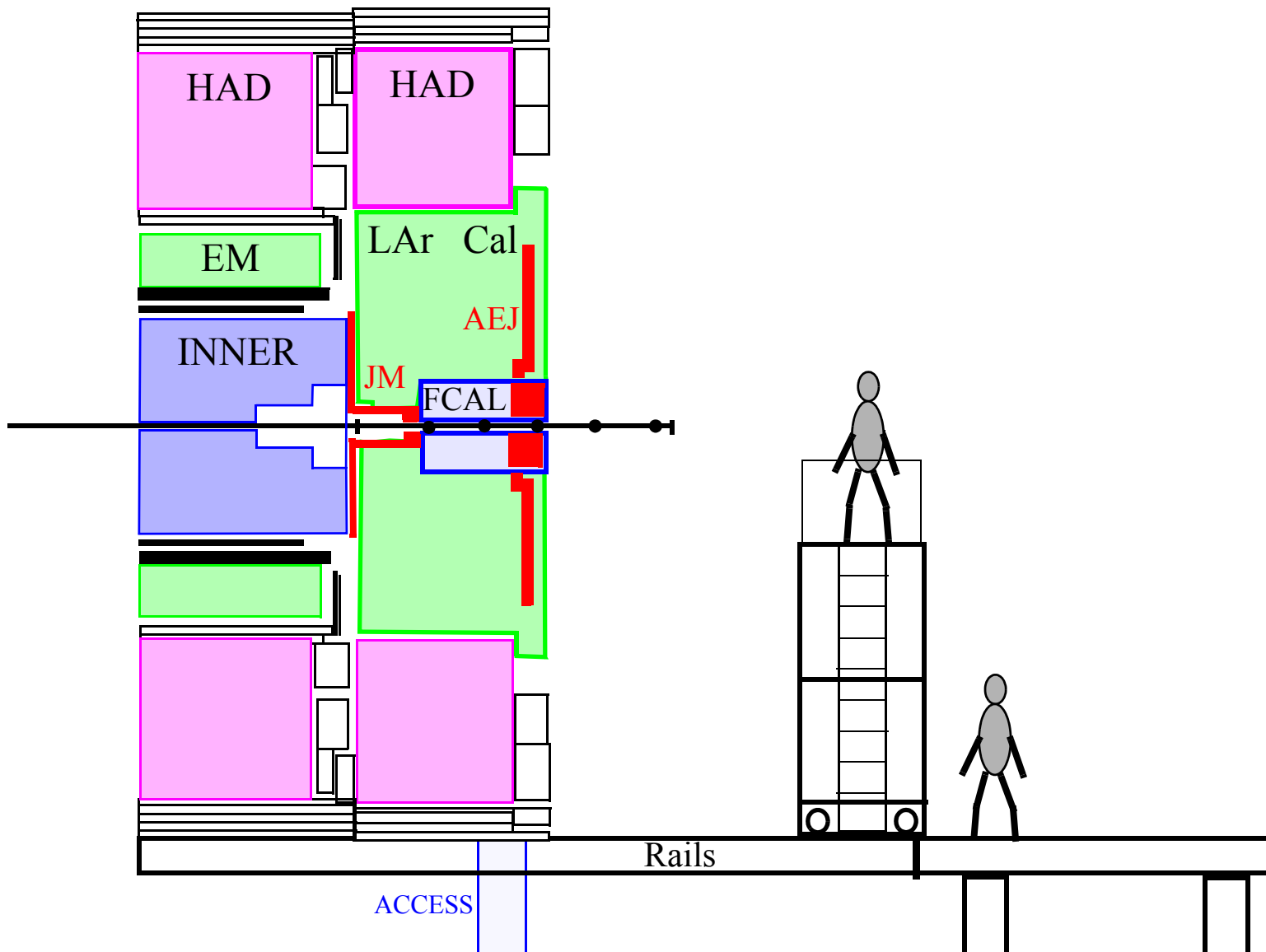




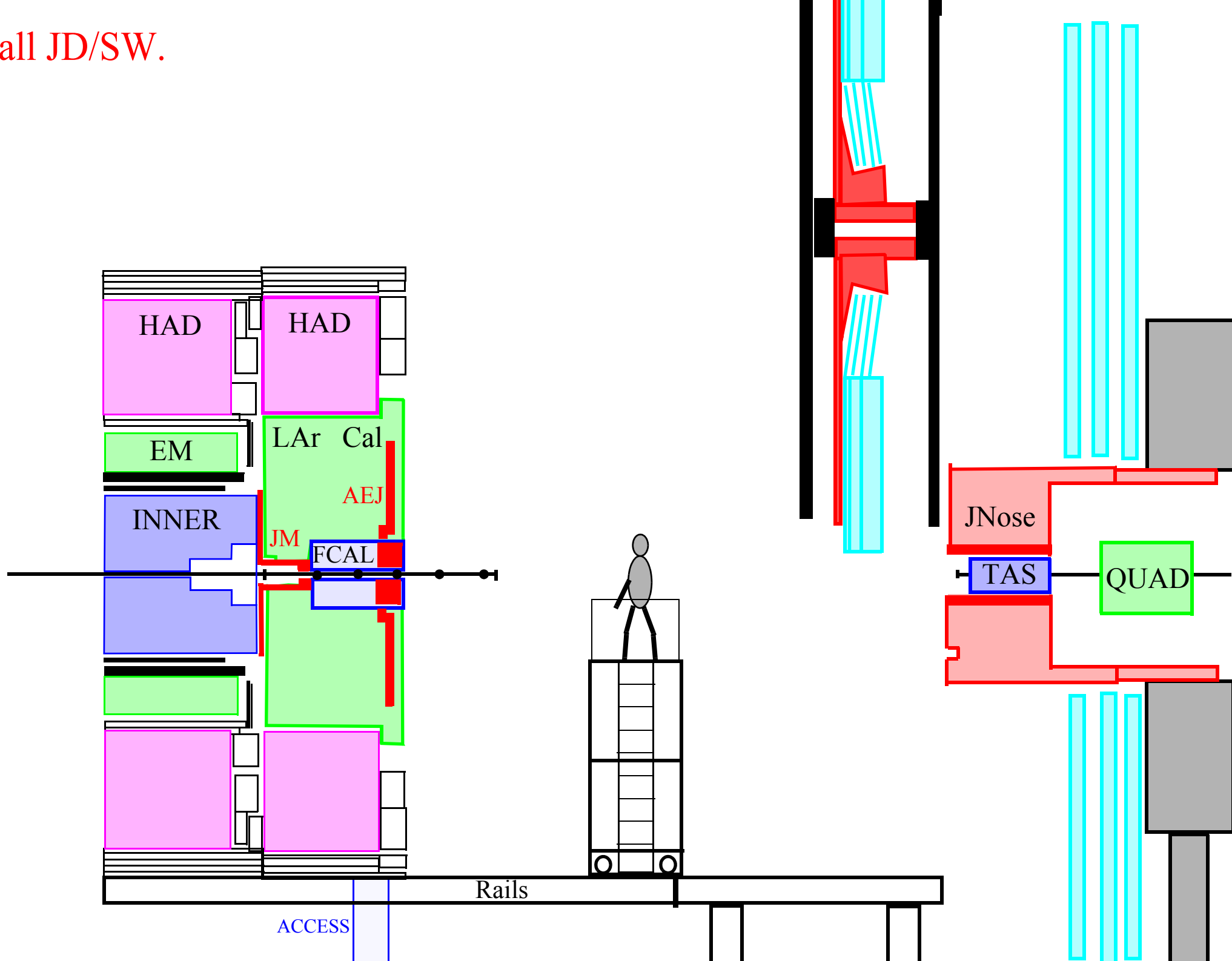


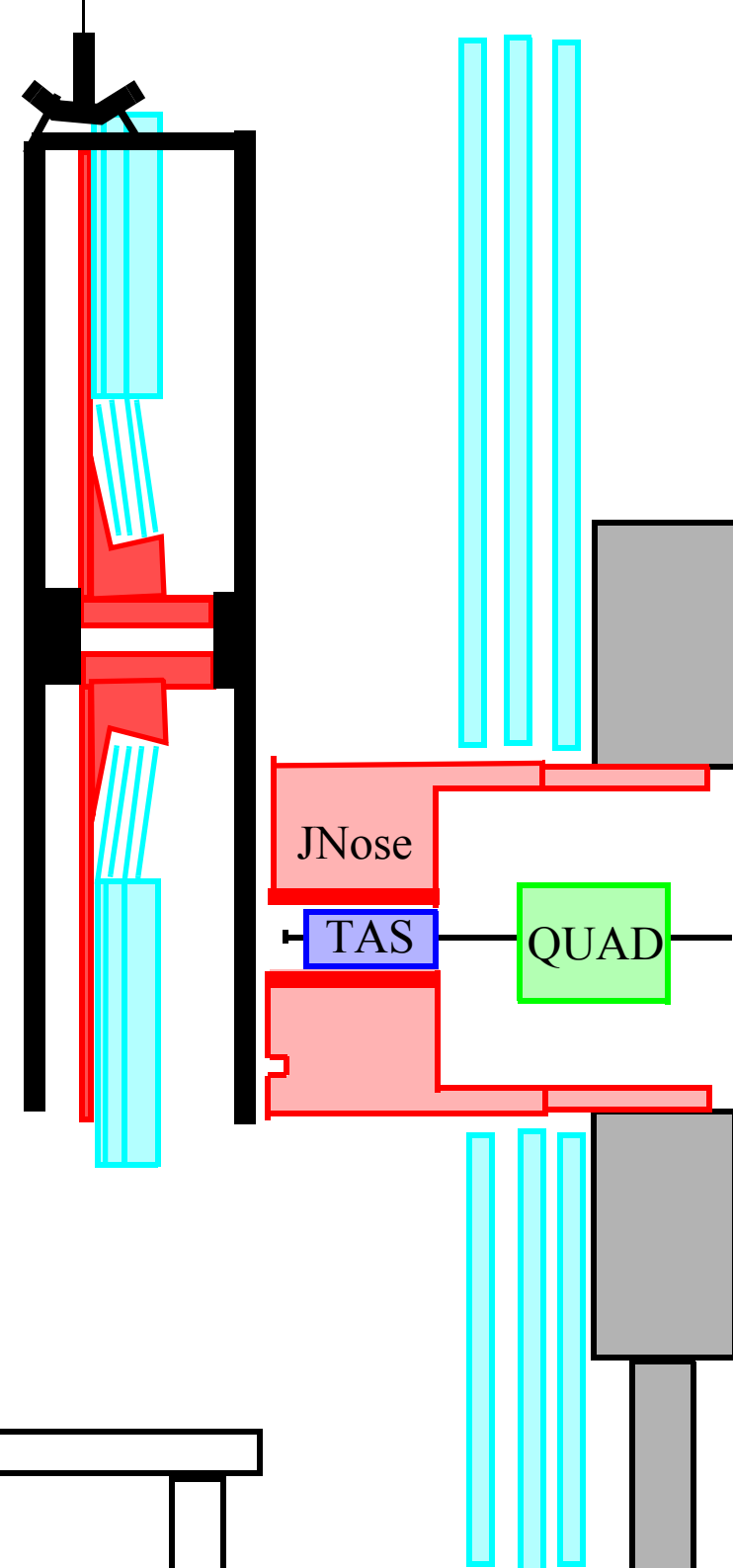
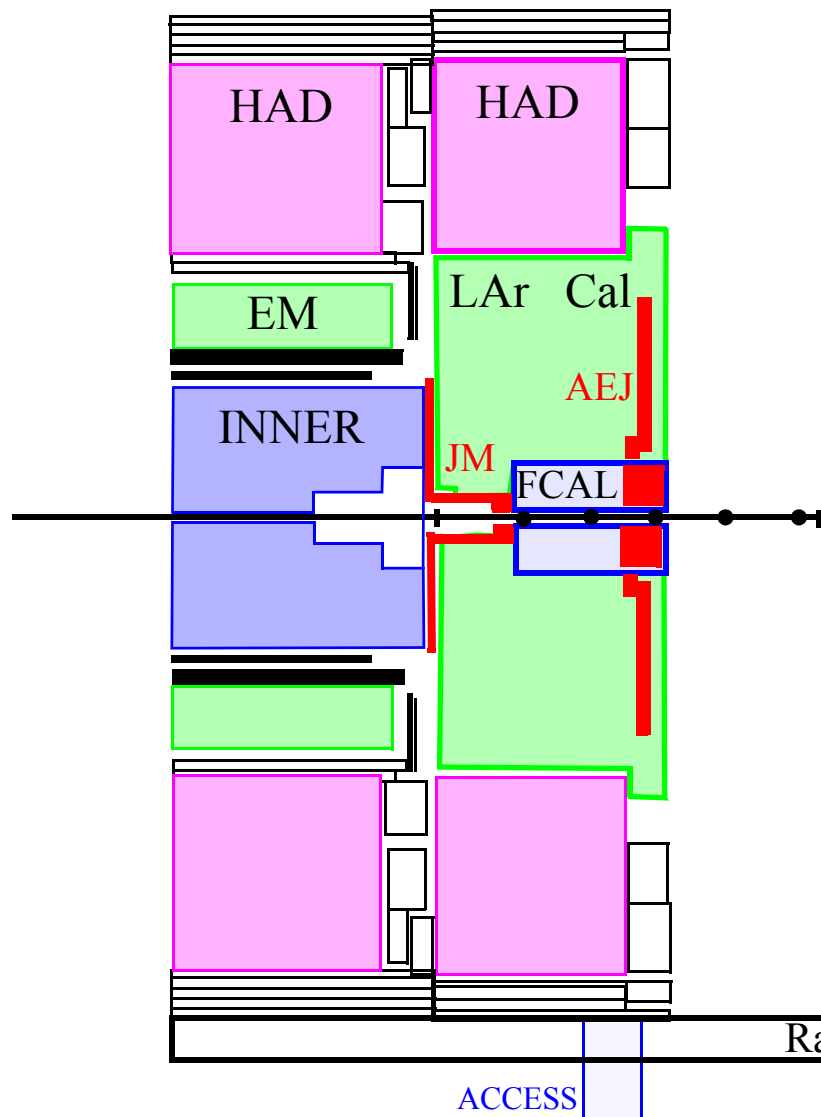




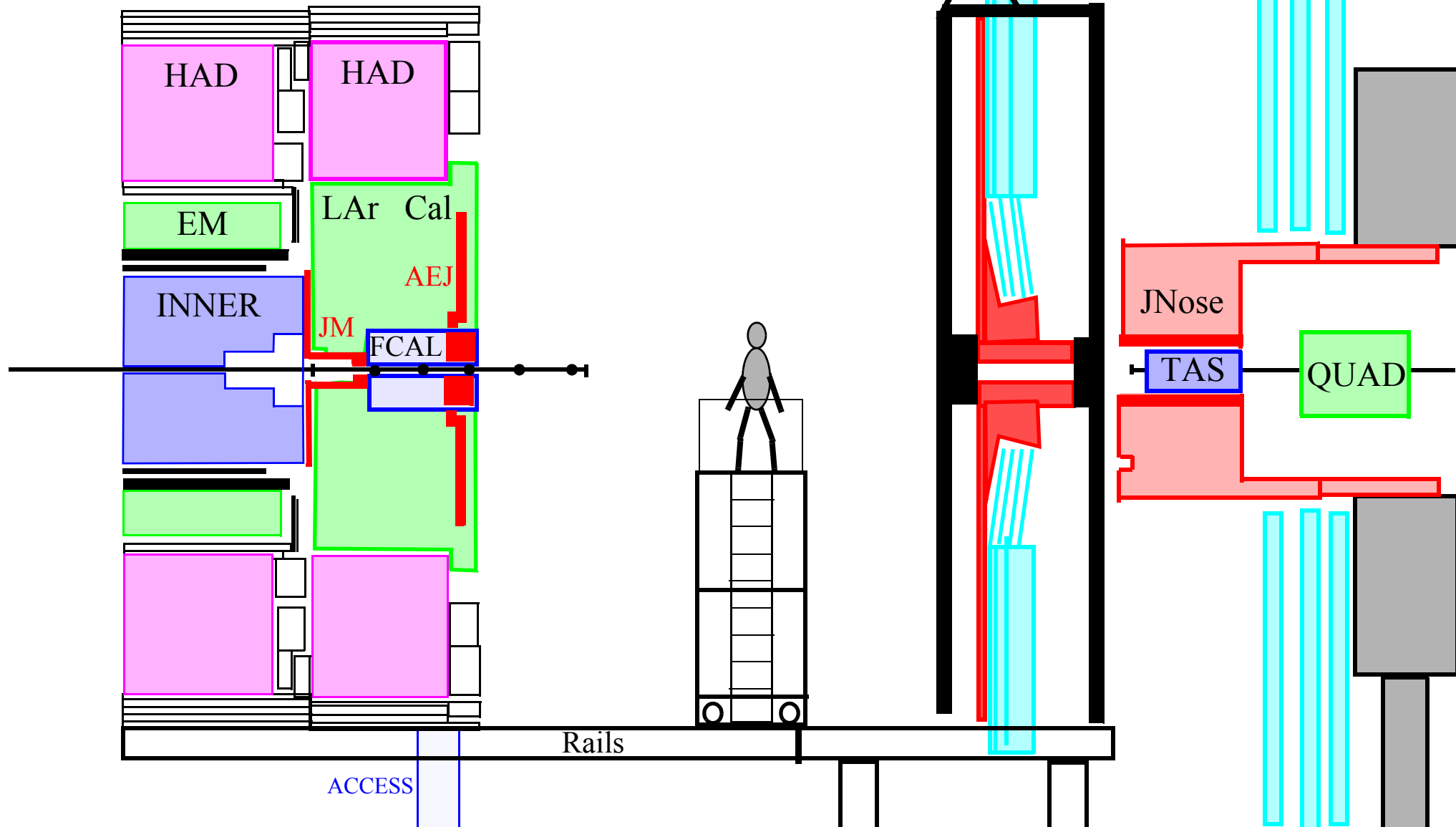


Install JD/SW.





The JD/SW has to be moved in sideways to get under the ECT services.



20 T THEORETICAL ZONE

20 T SAFETY ZONE

20 F EXTENDED ZONE

ECT

Liftingpoints

JD

JN

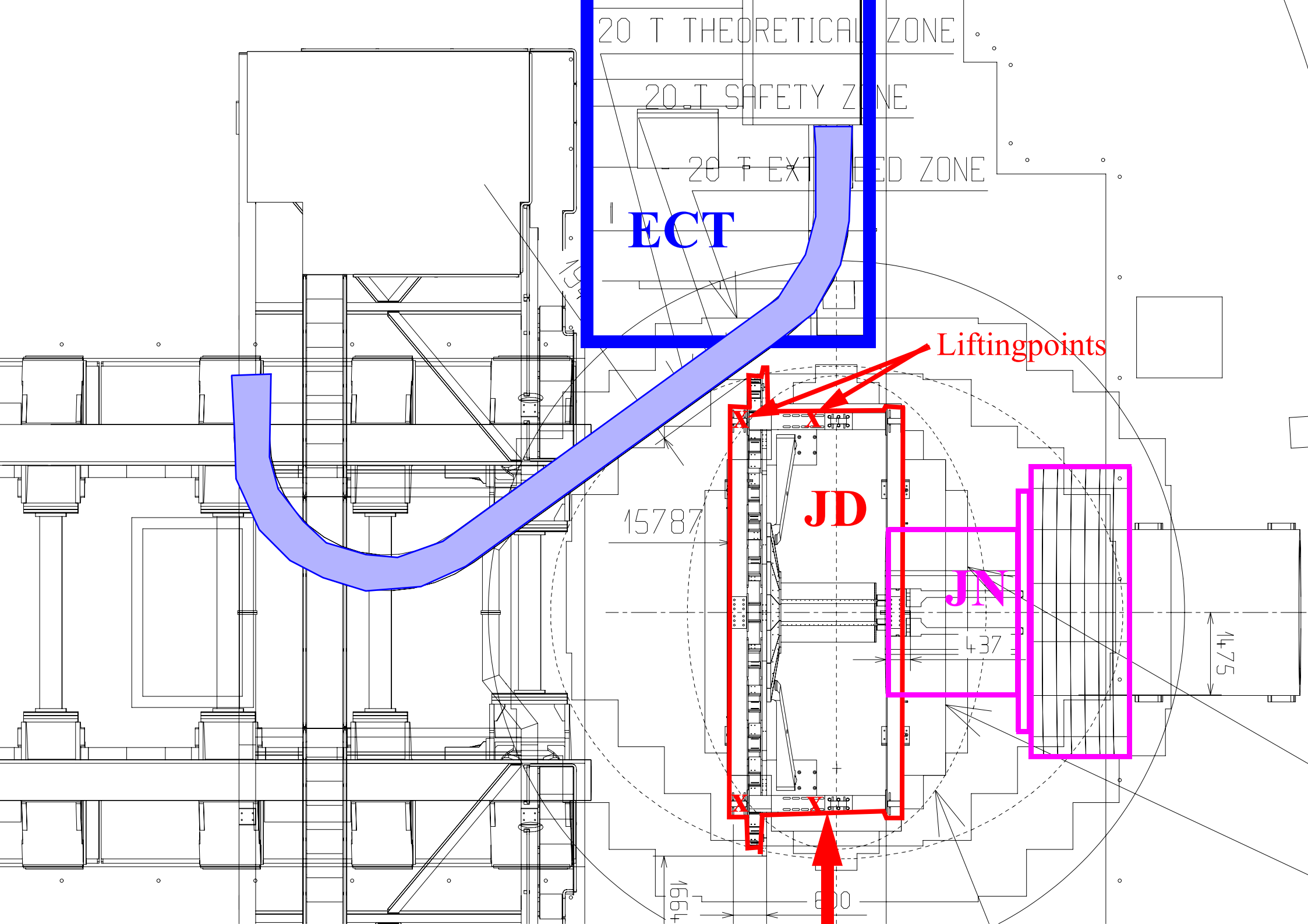
15787

437

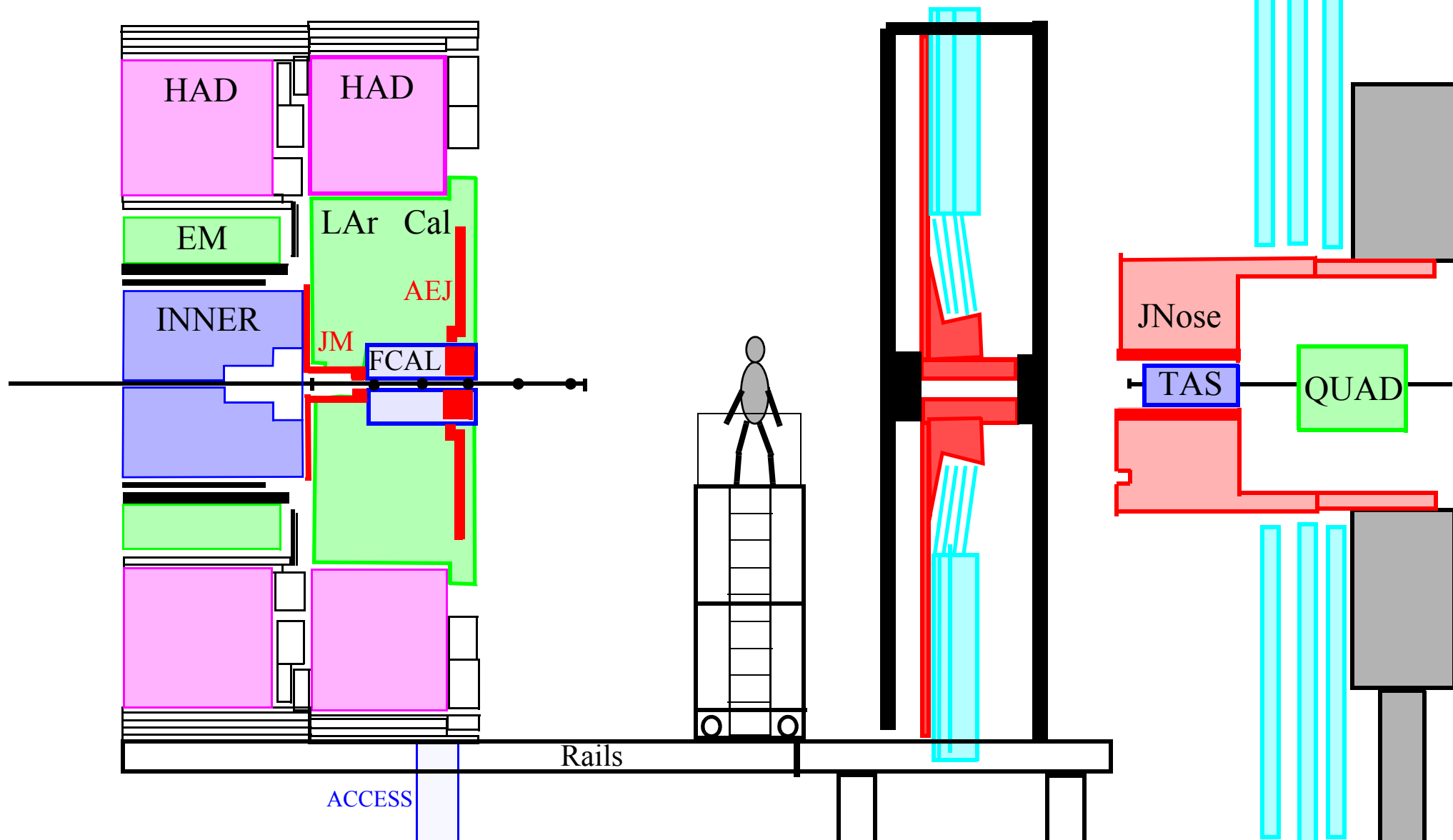
1475

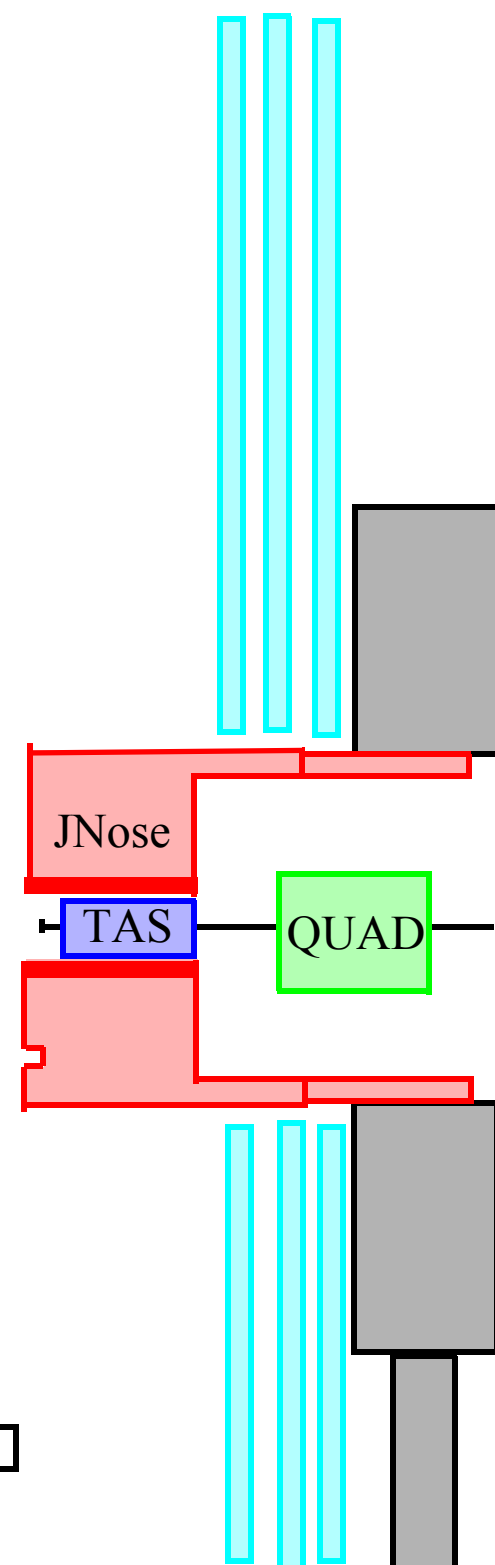
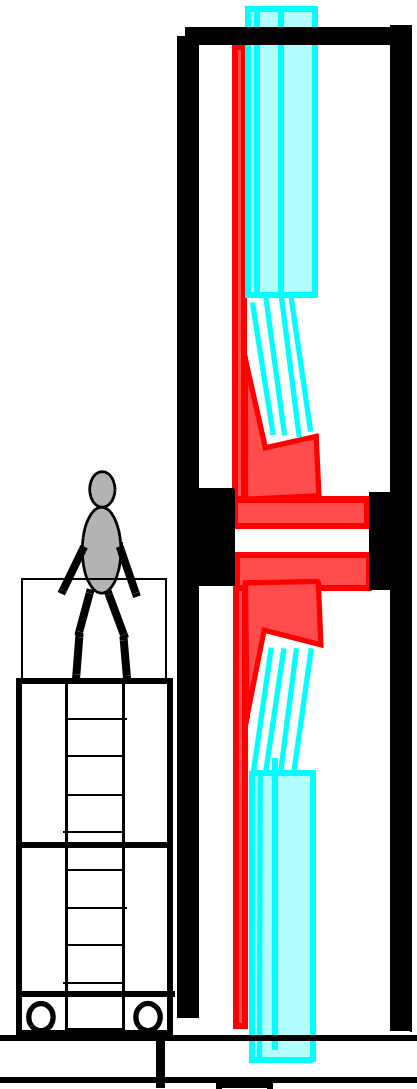
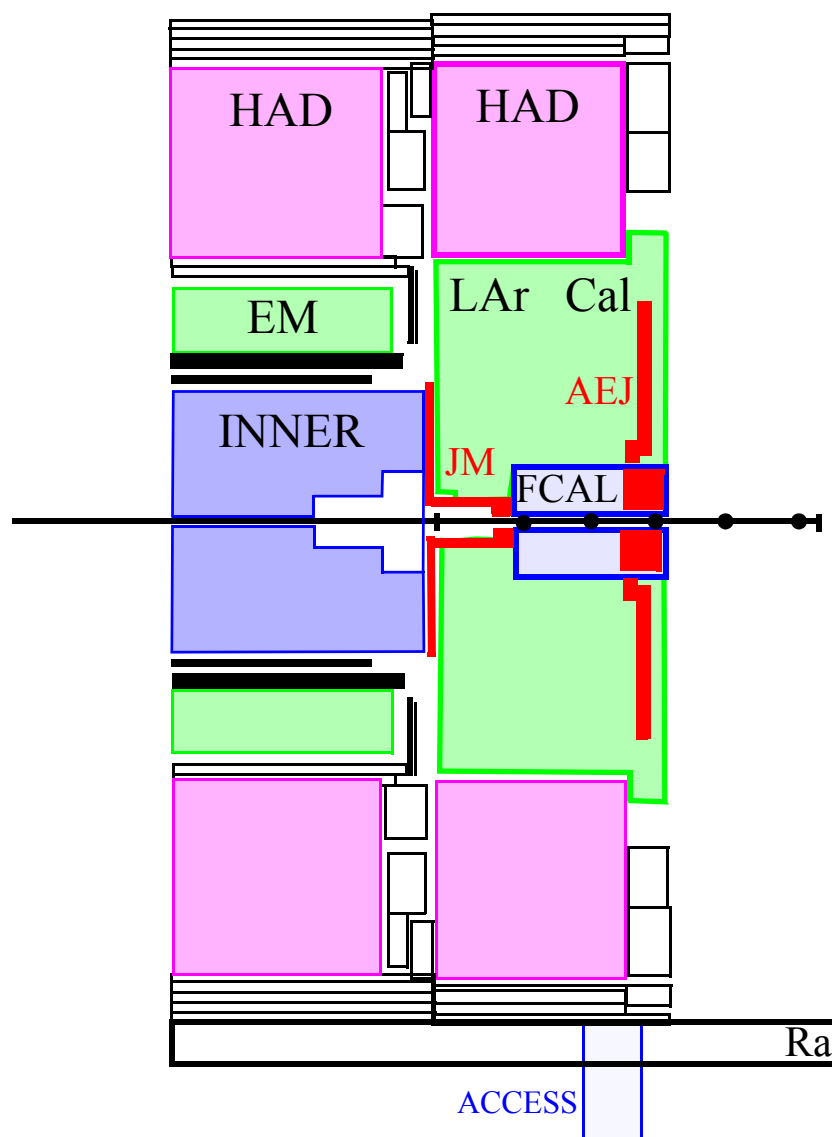
1664

800



The JD/SW has to be moved towards the IP on its airpads.





20 T THEORETICAL ZONE

20 T SAFETY ZONE

20 F EXTENDED ZONE

ECT

JD

15787

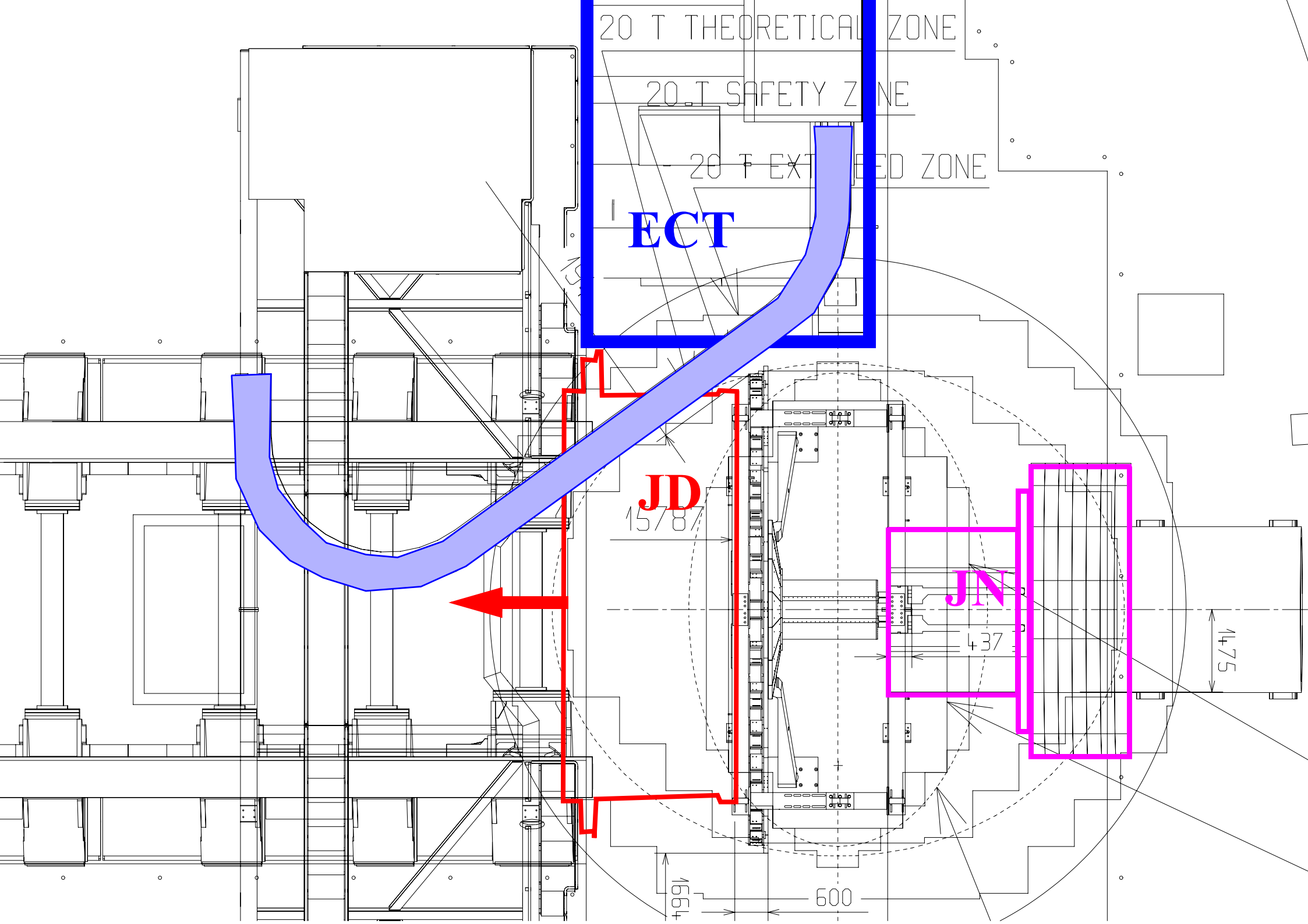
JN

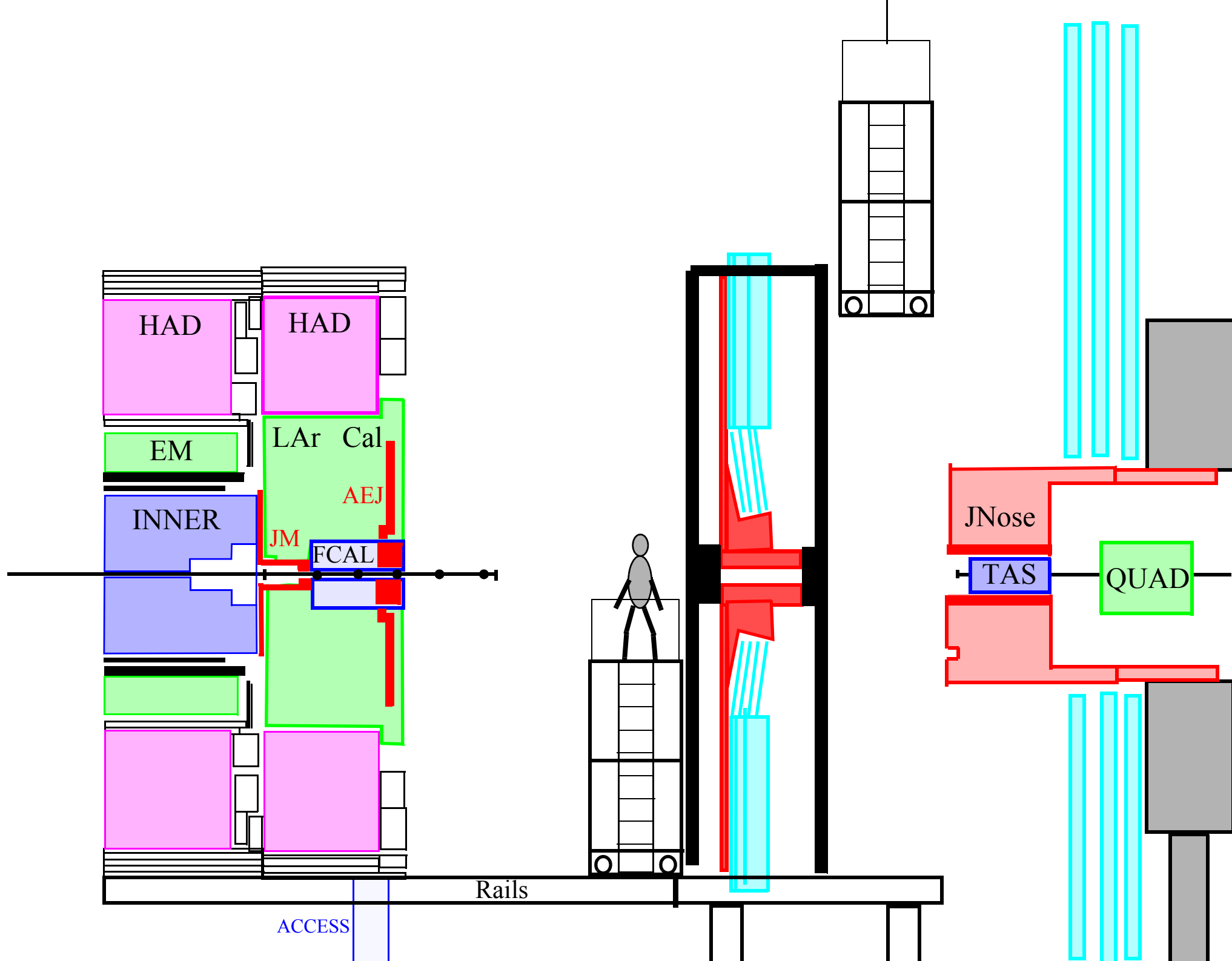
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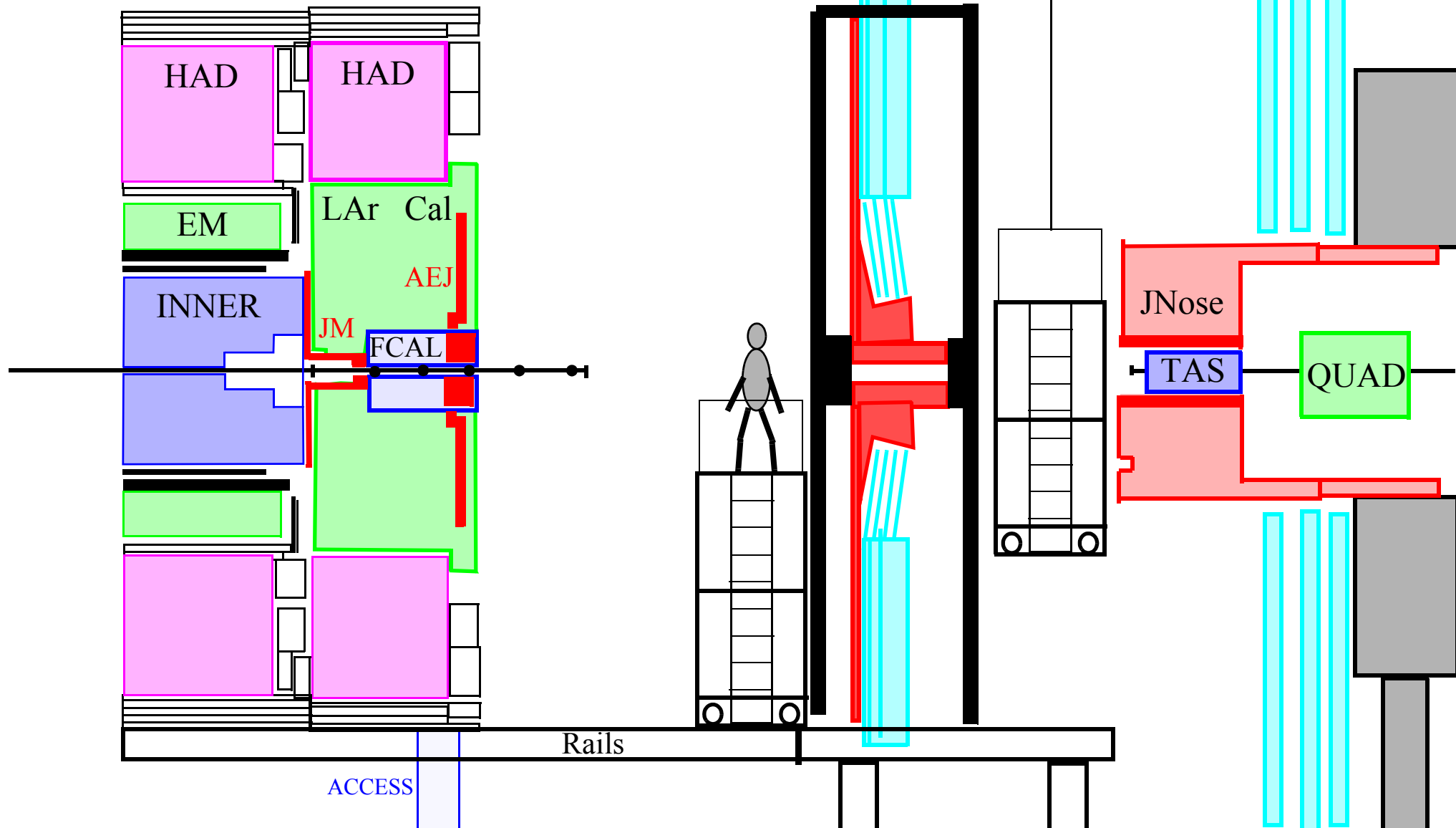
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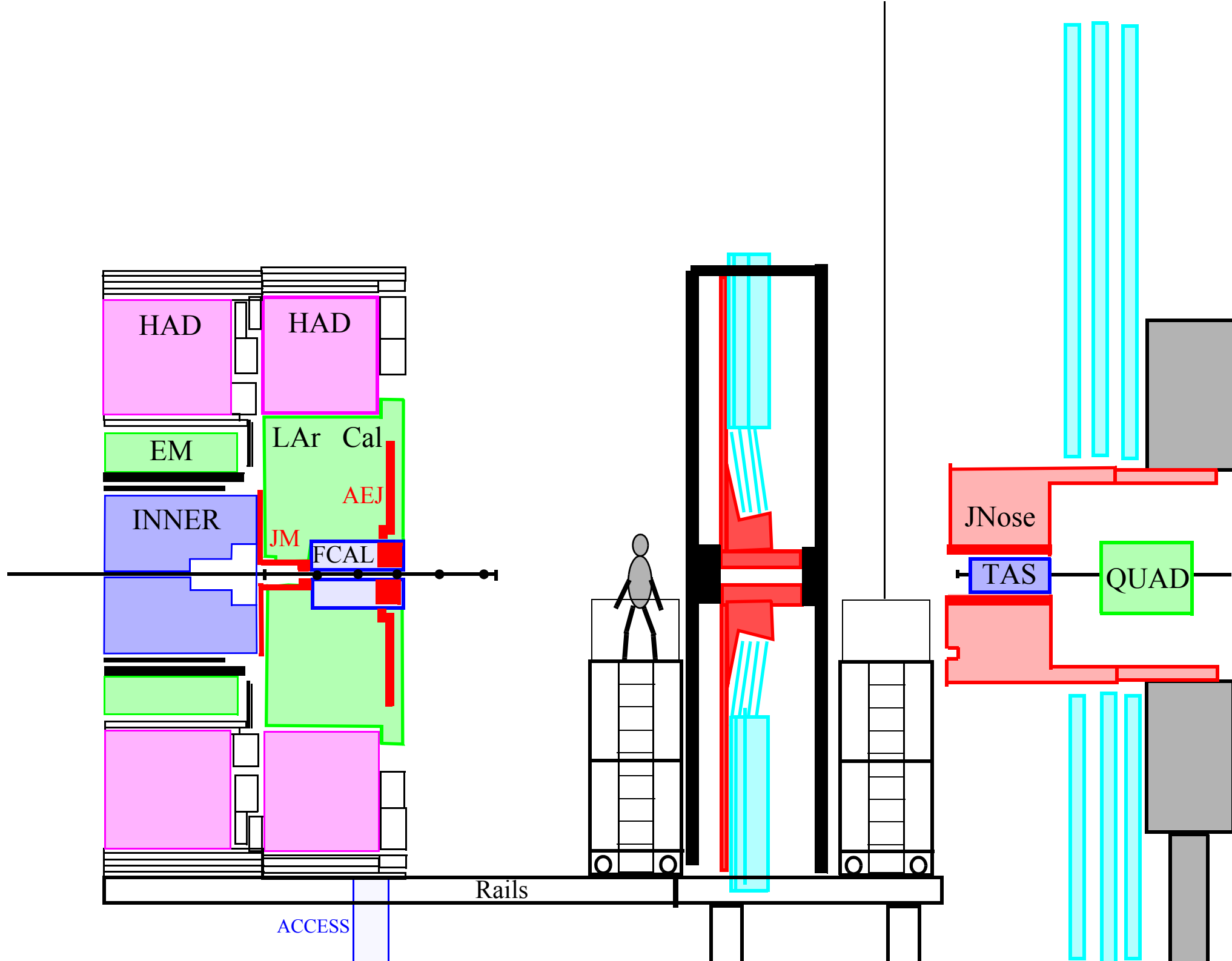
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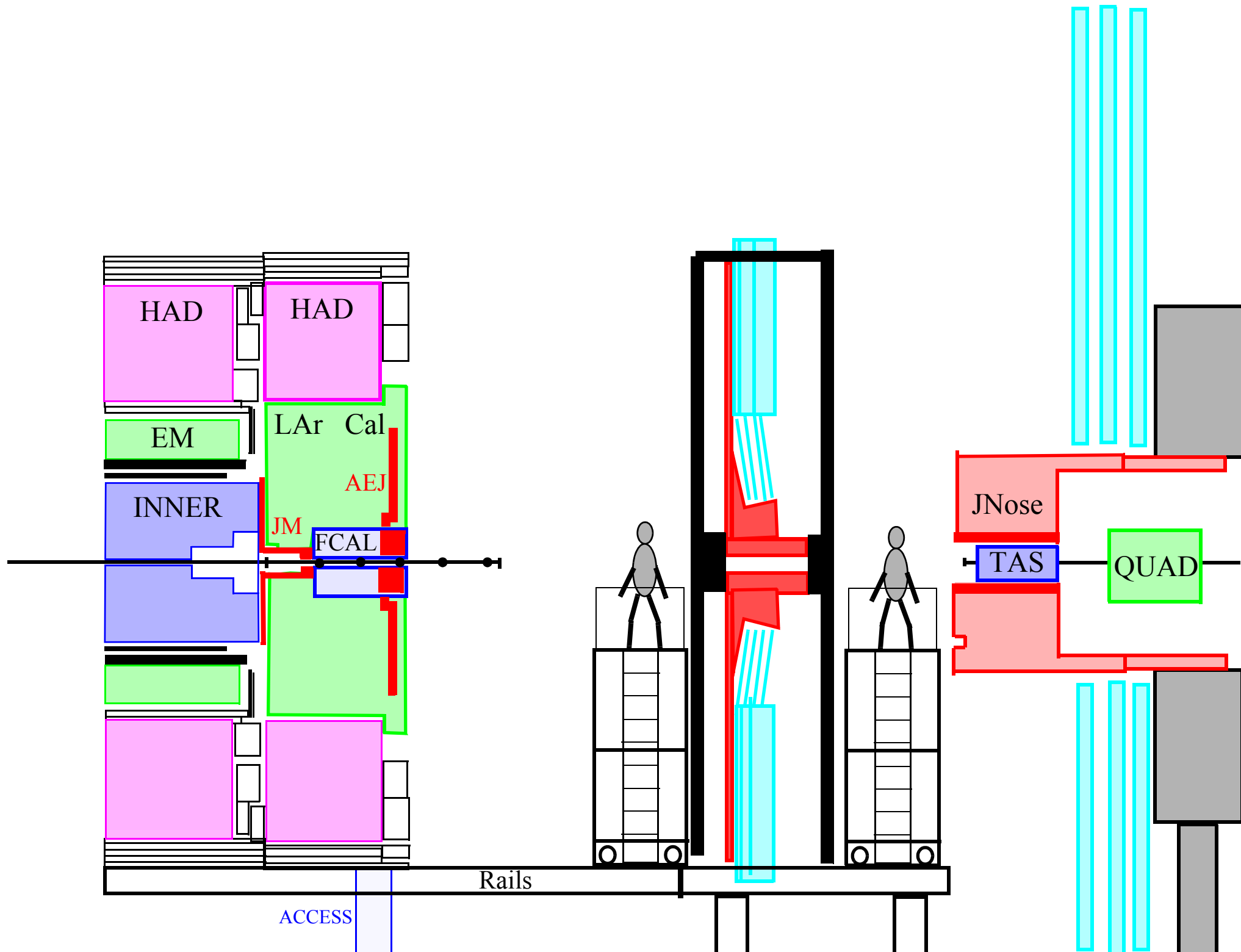
600

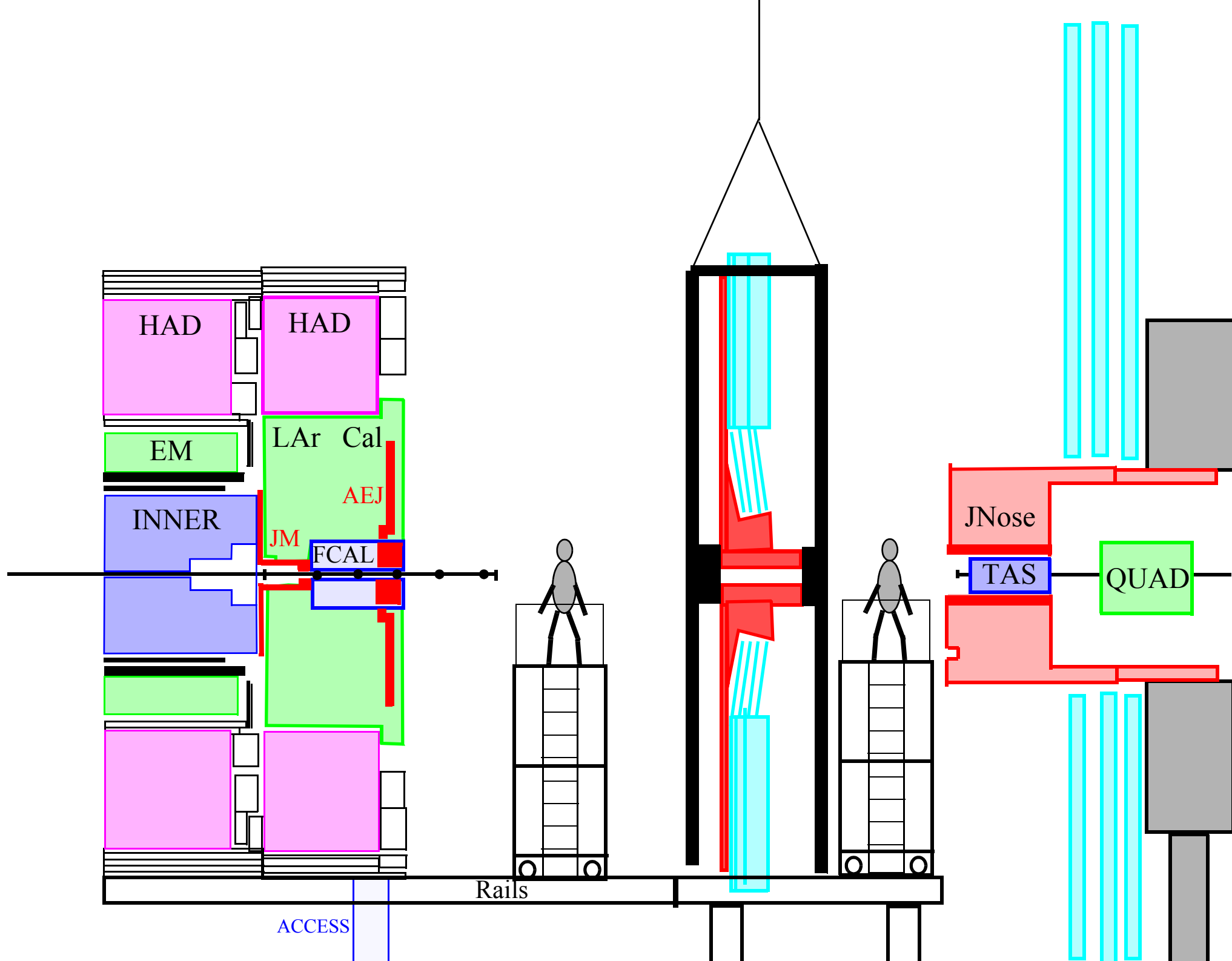












20 T THEORETICAL ZONE

20 T SAFETY ZONE

20 F EXTENDED ZONE

ECT

New
Liftingpoints

JD

JN

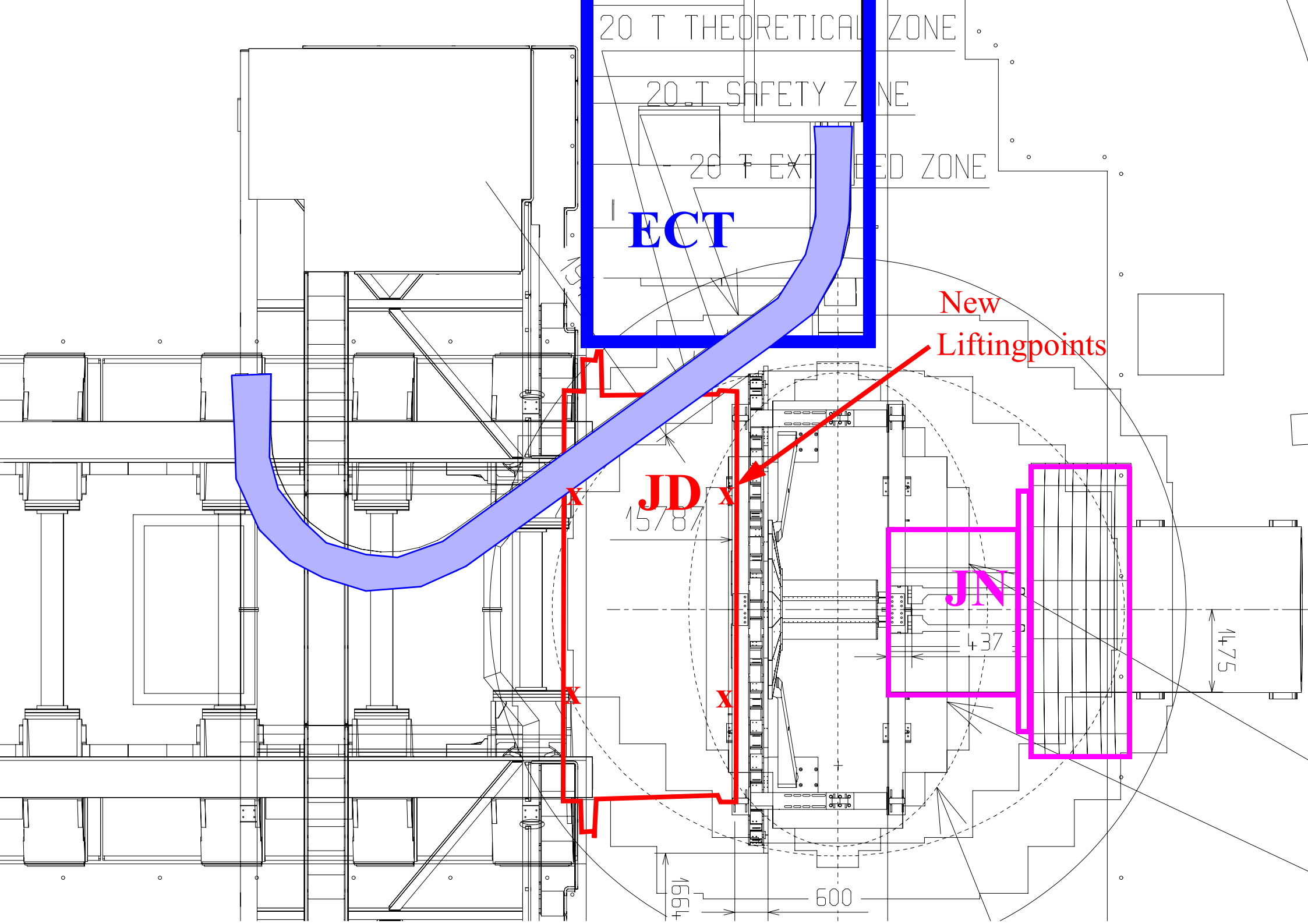
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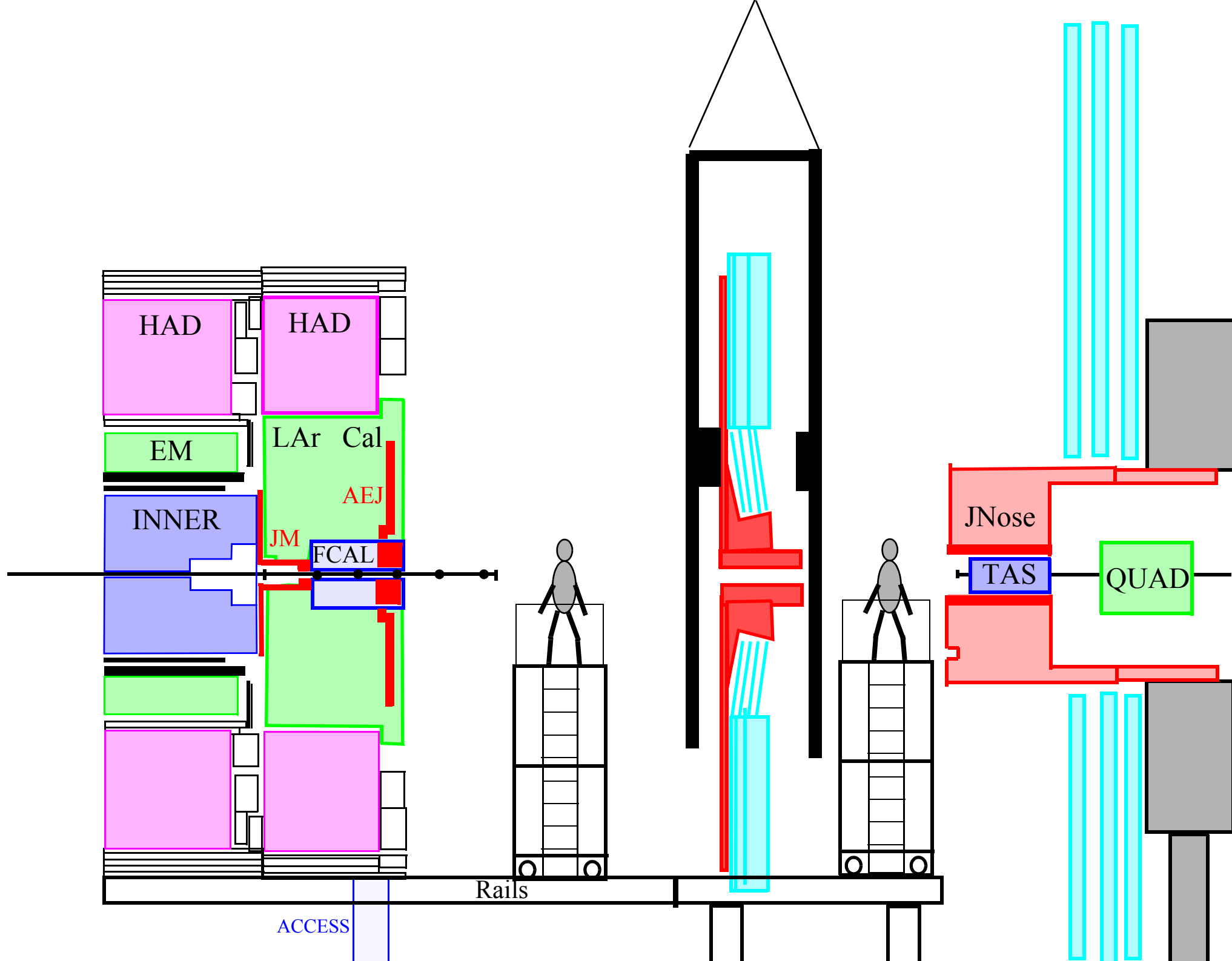
437

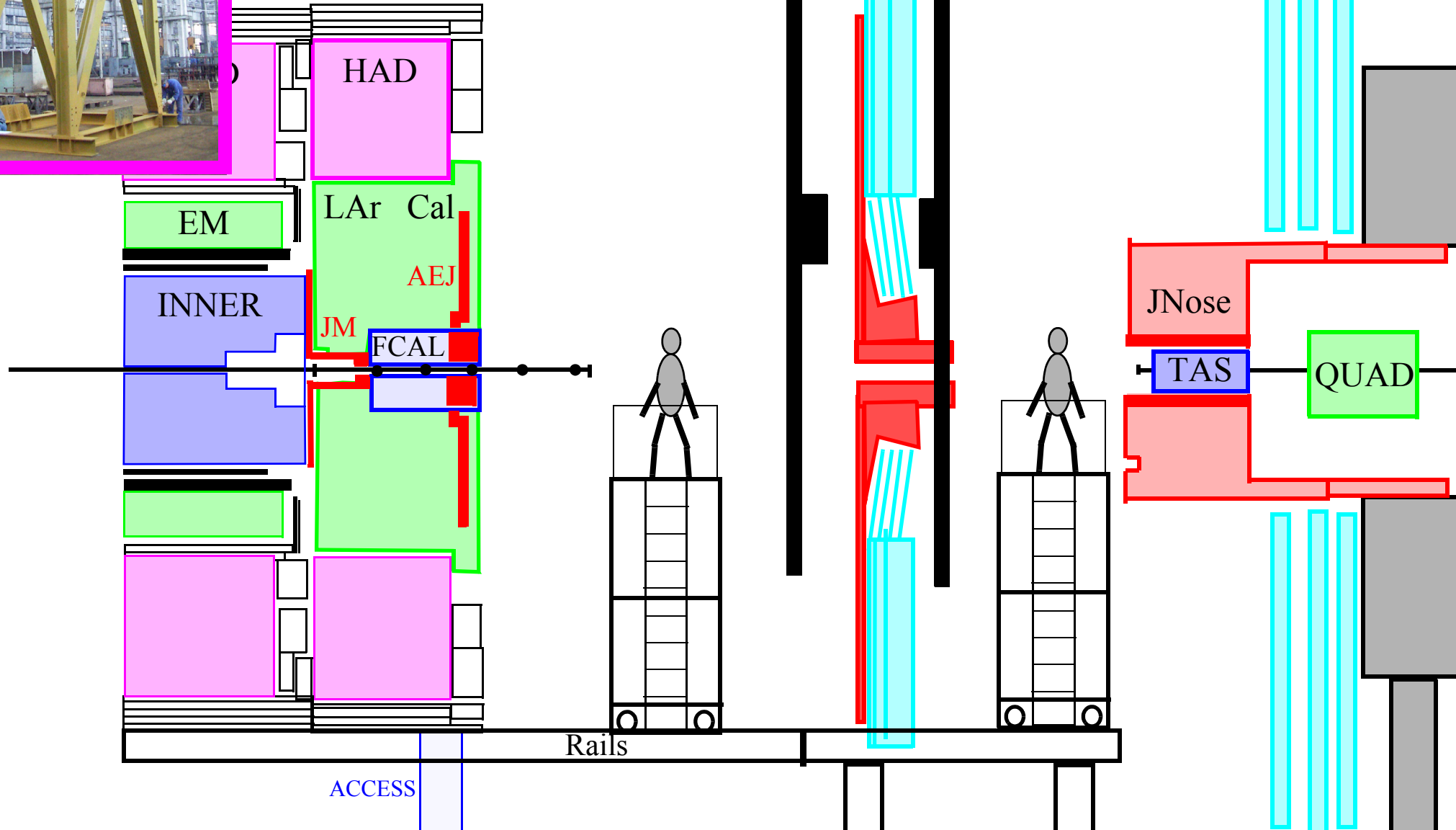
1475

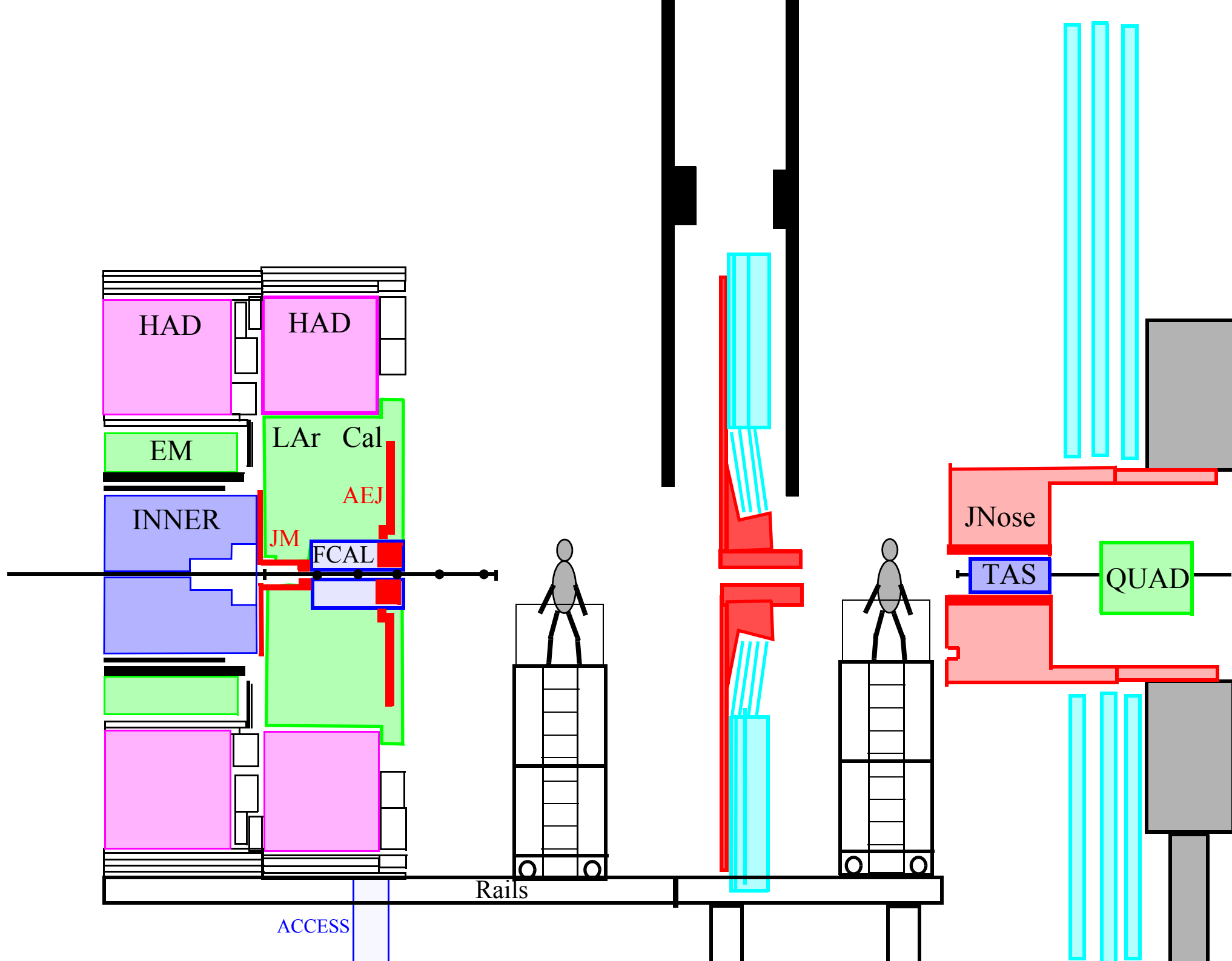
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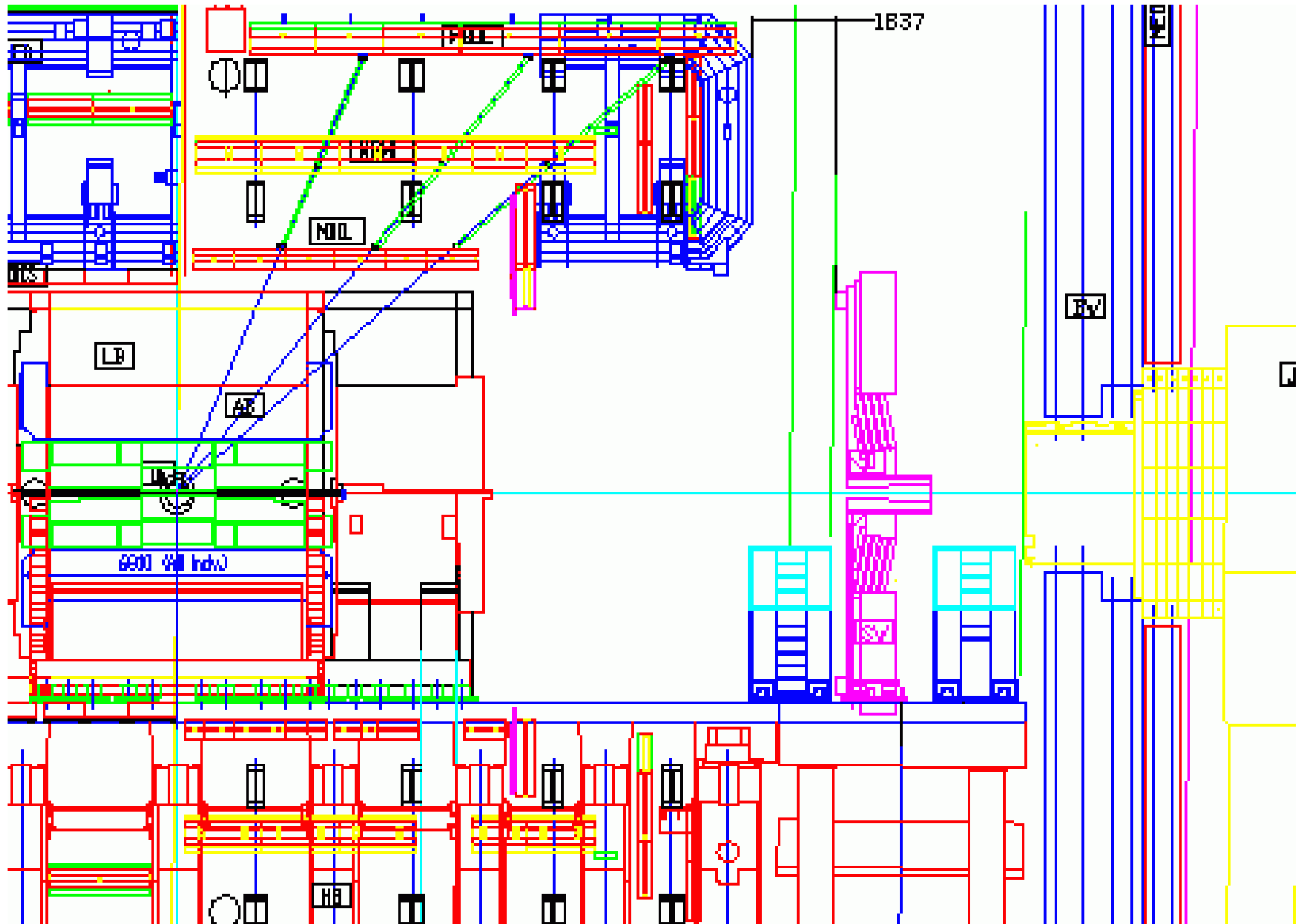
600



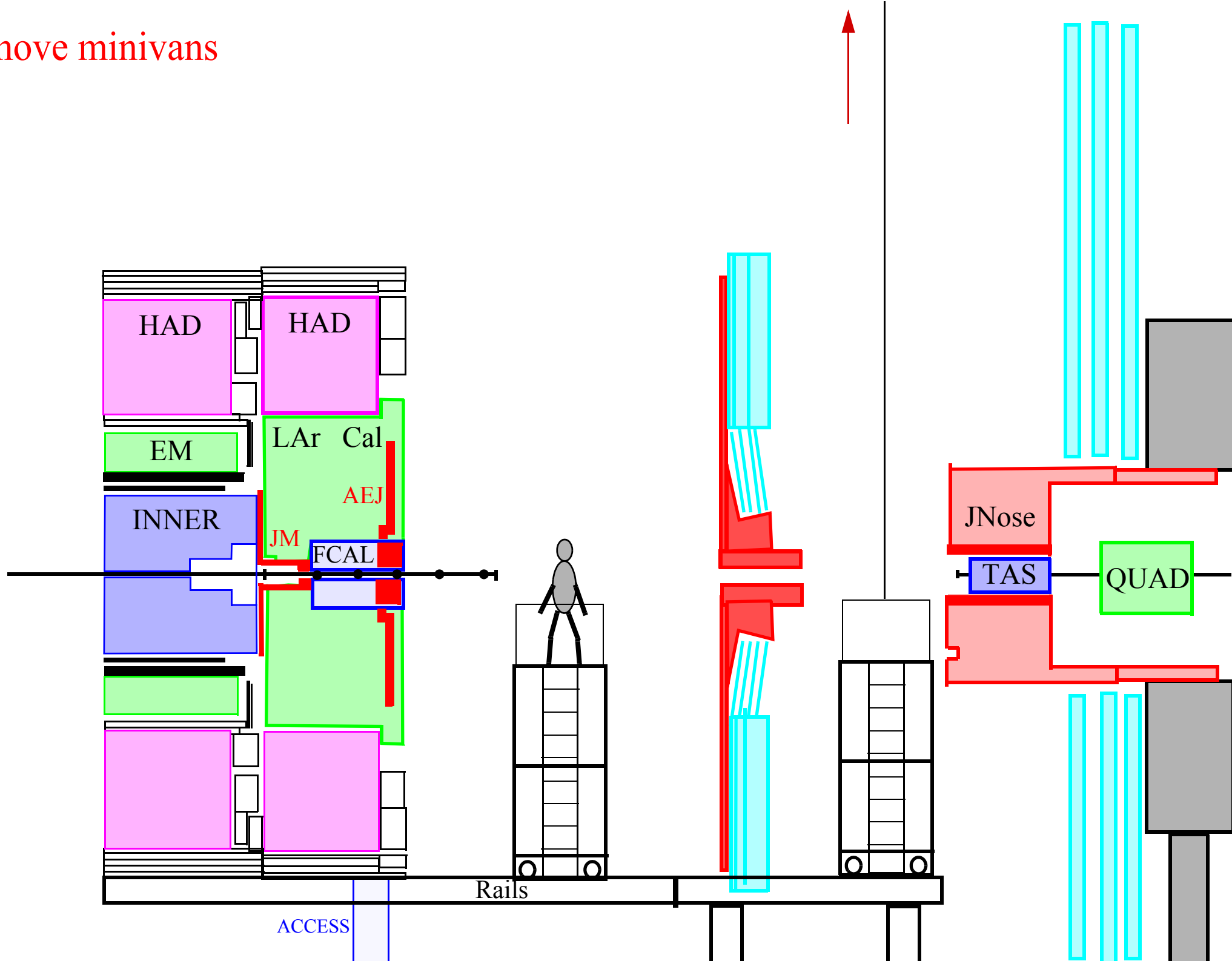


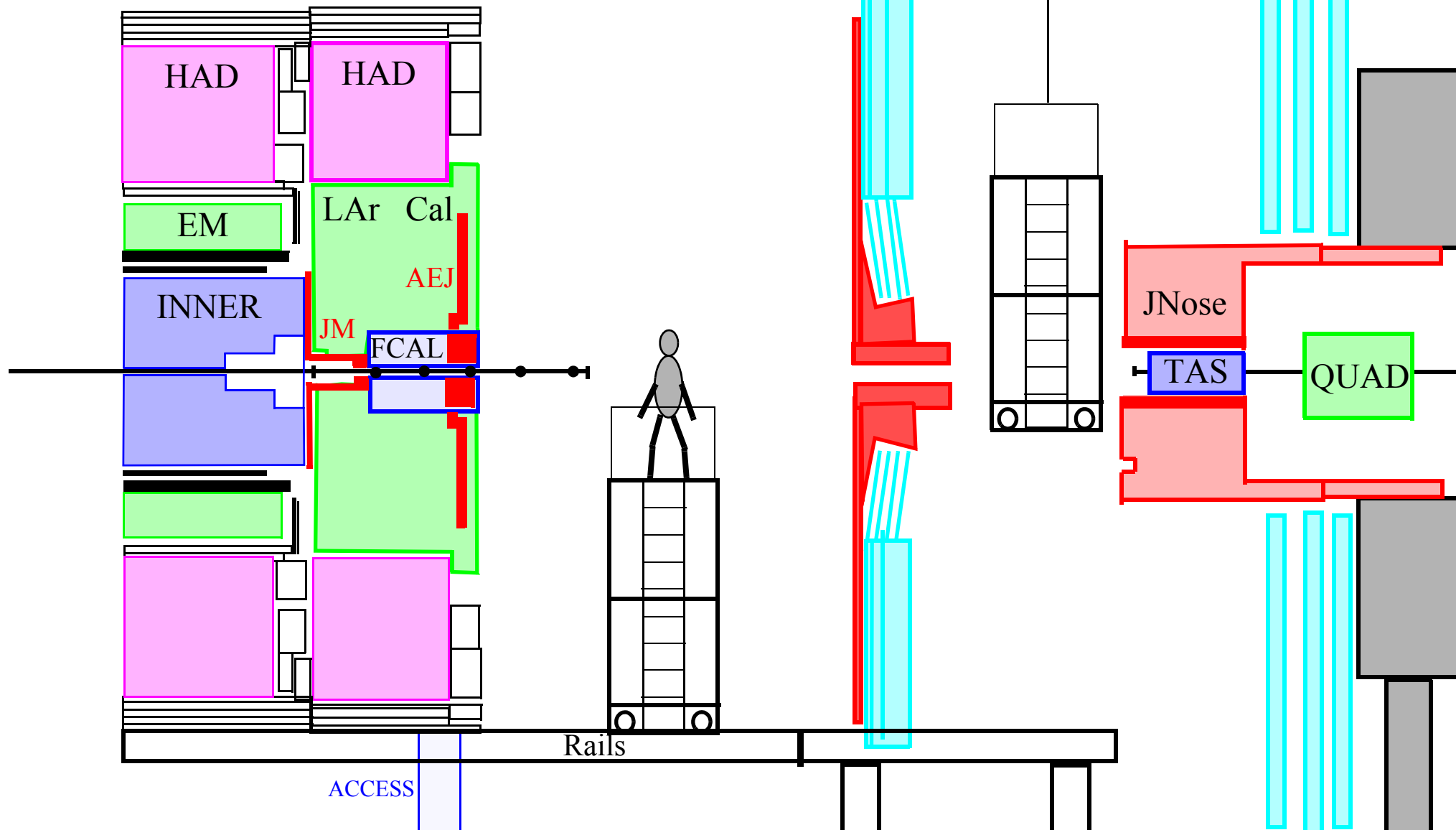


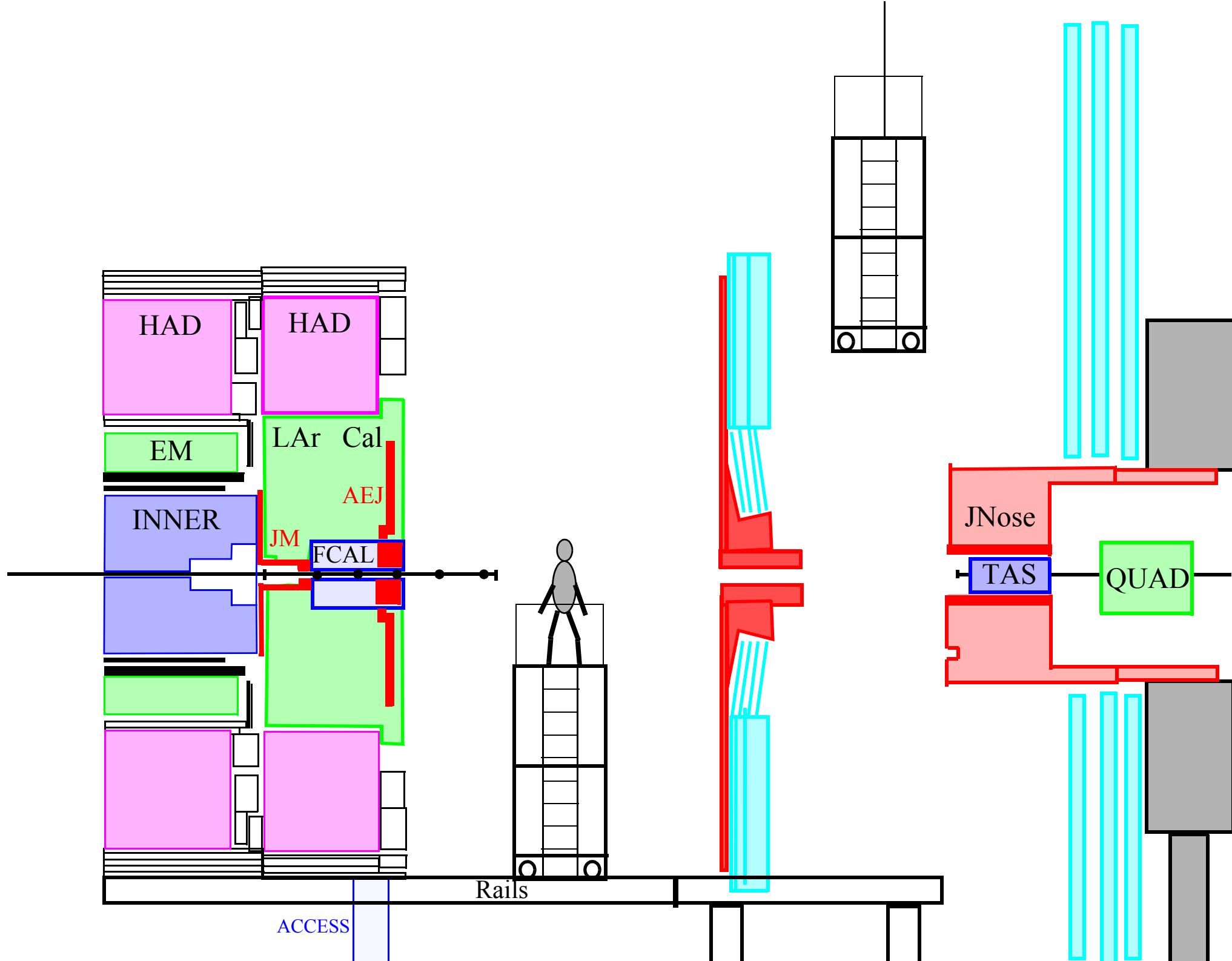




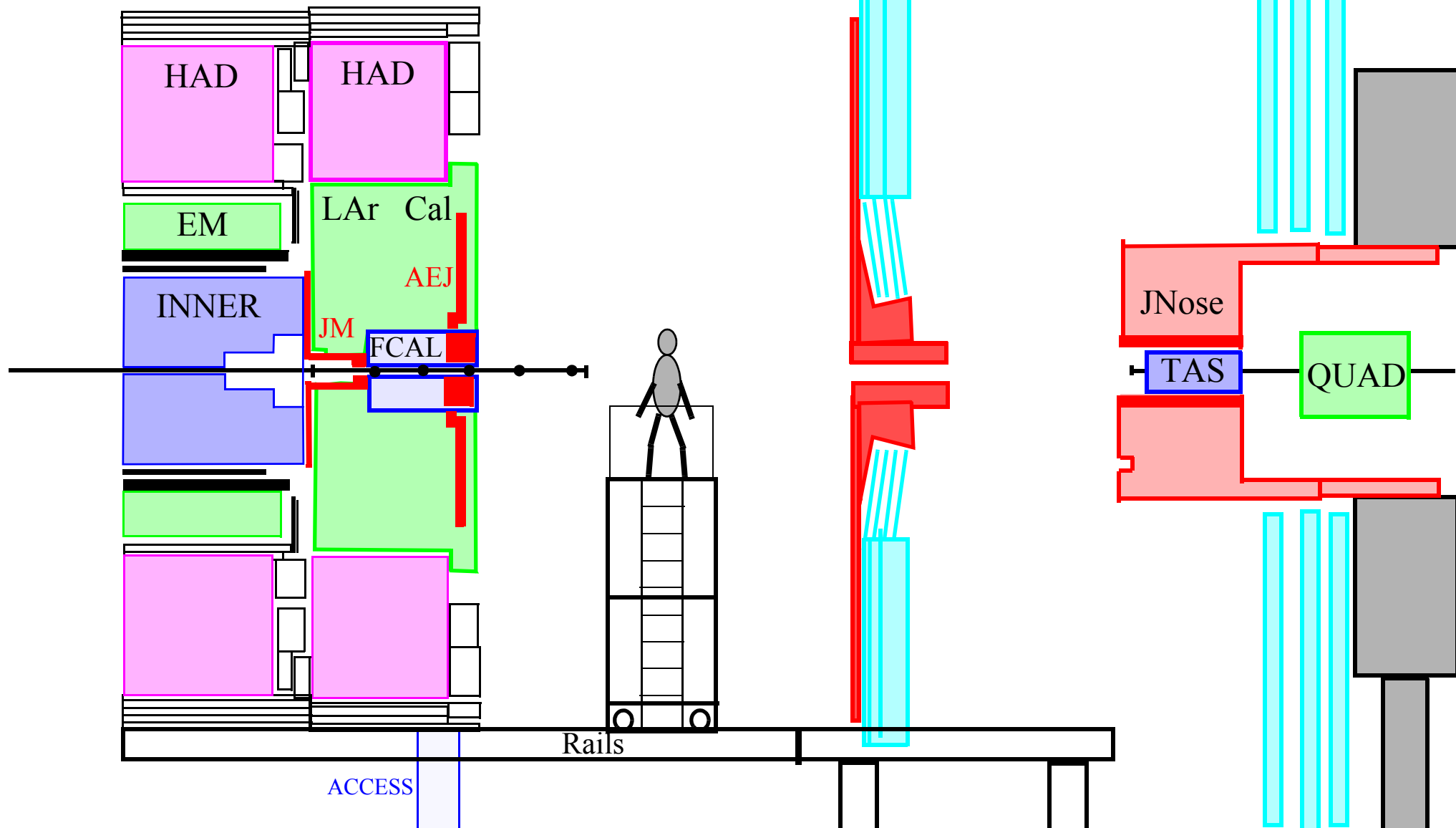
Remove minivans

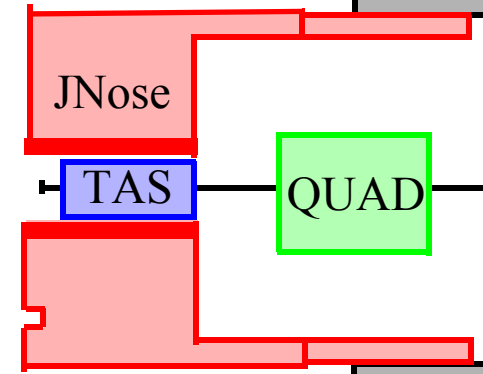
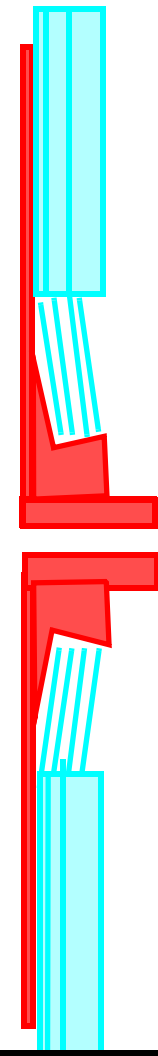
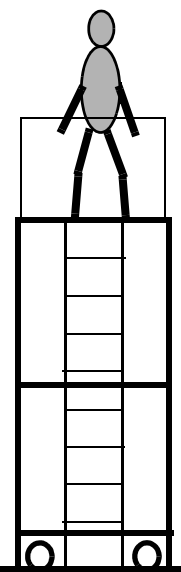
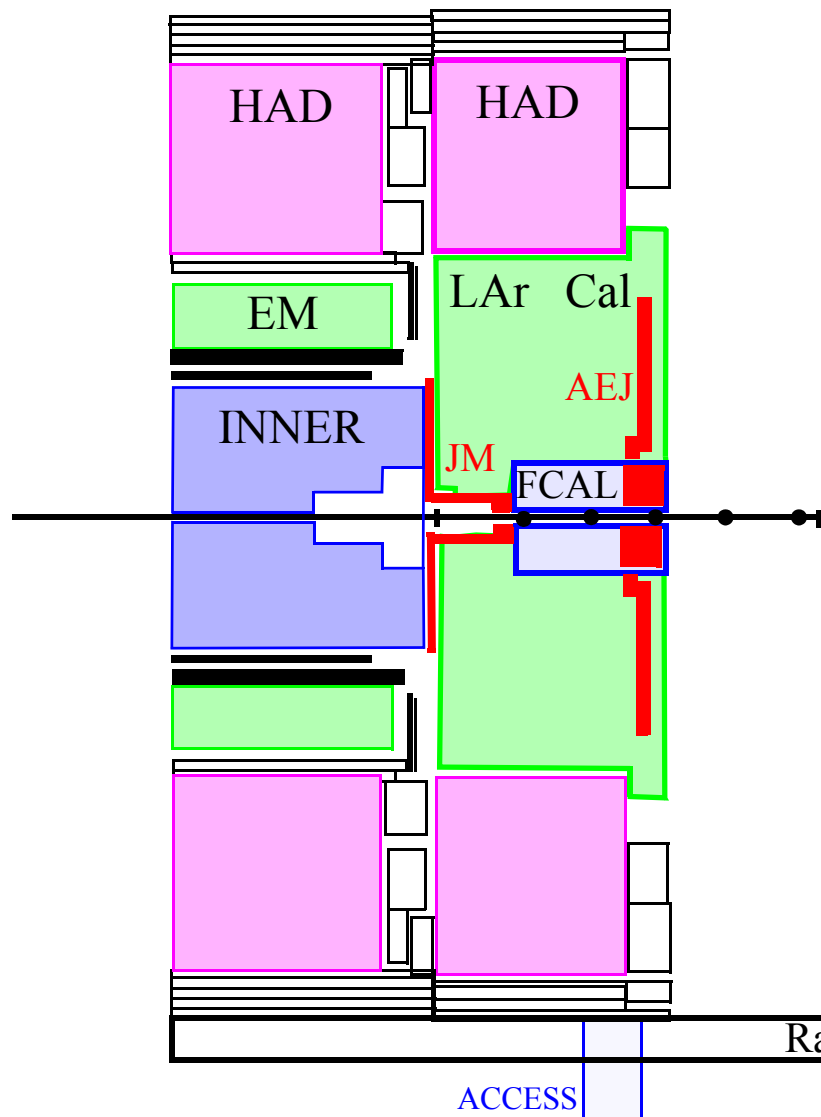


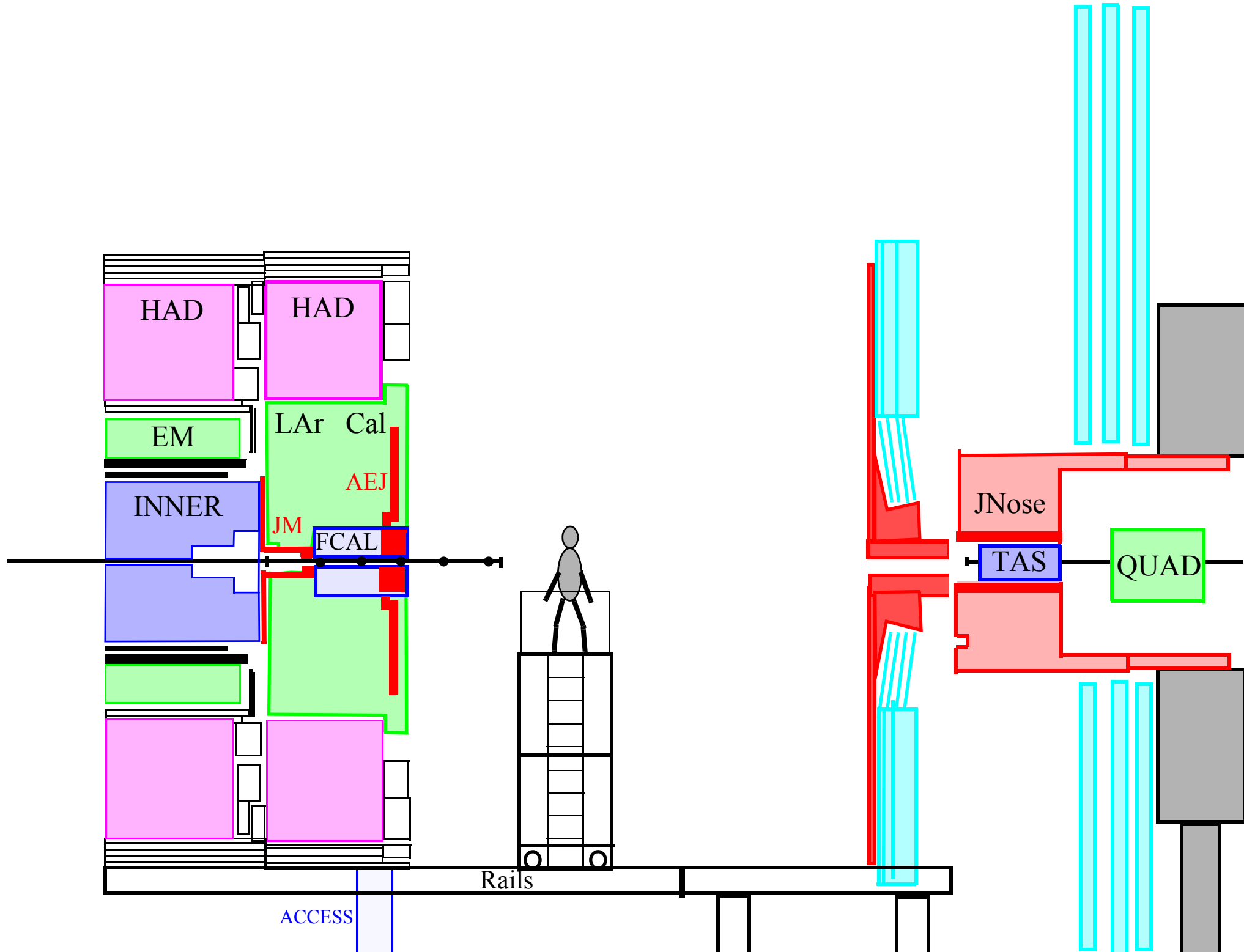


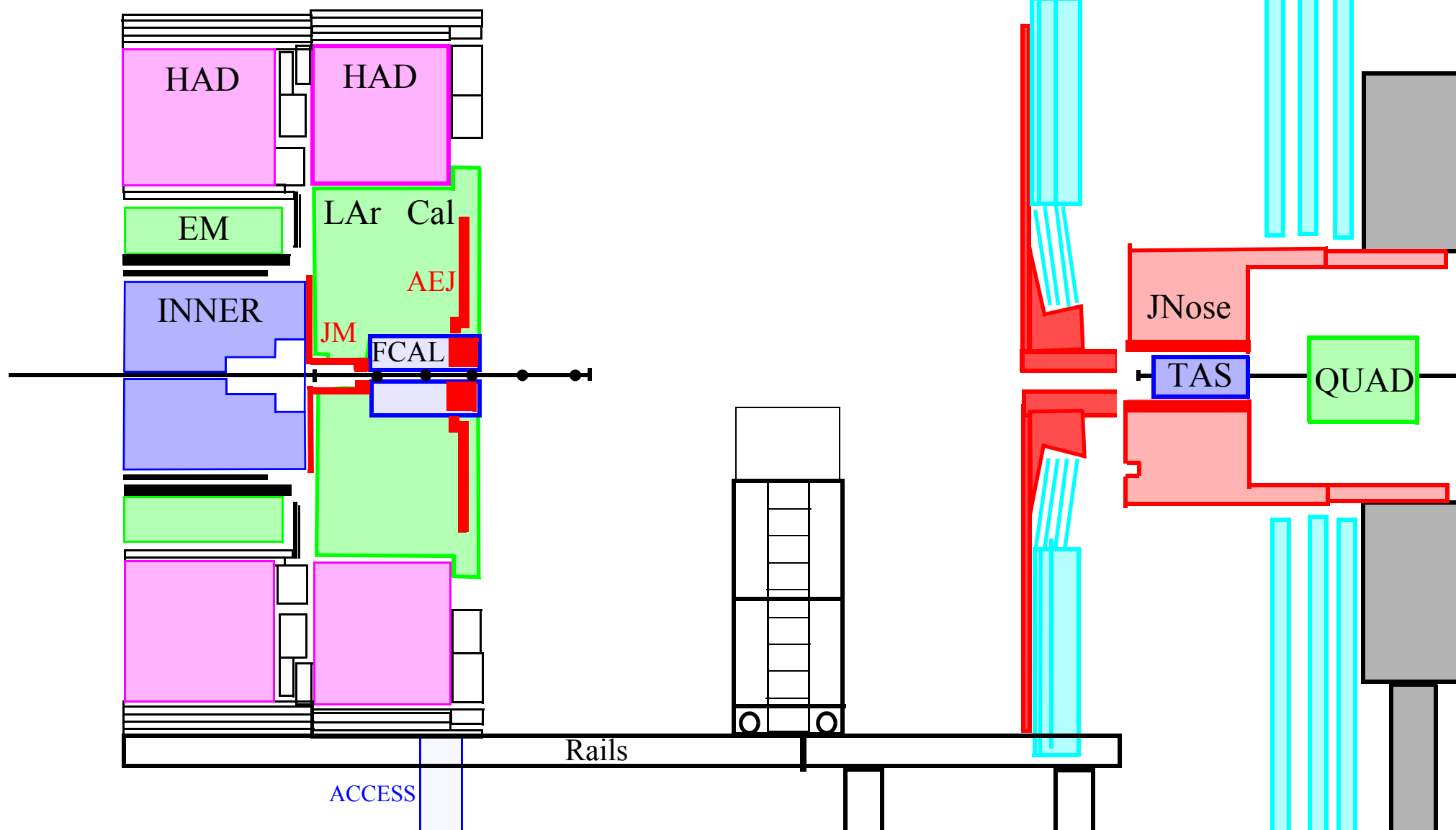


Move JD/SW.

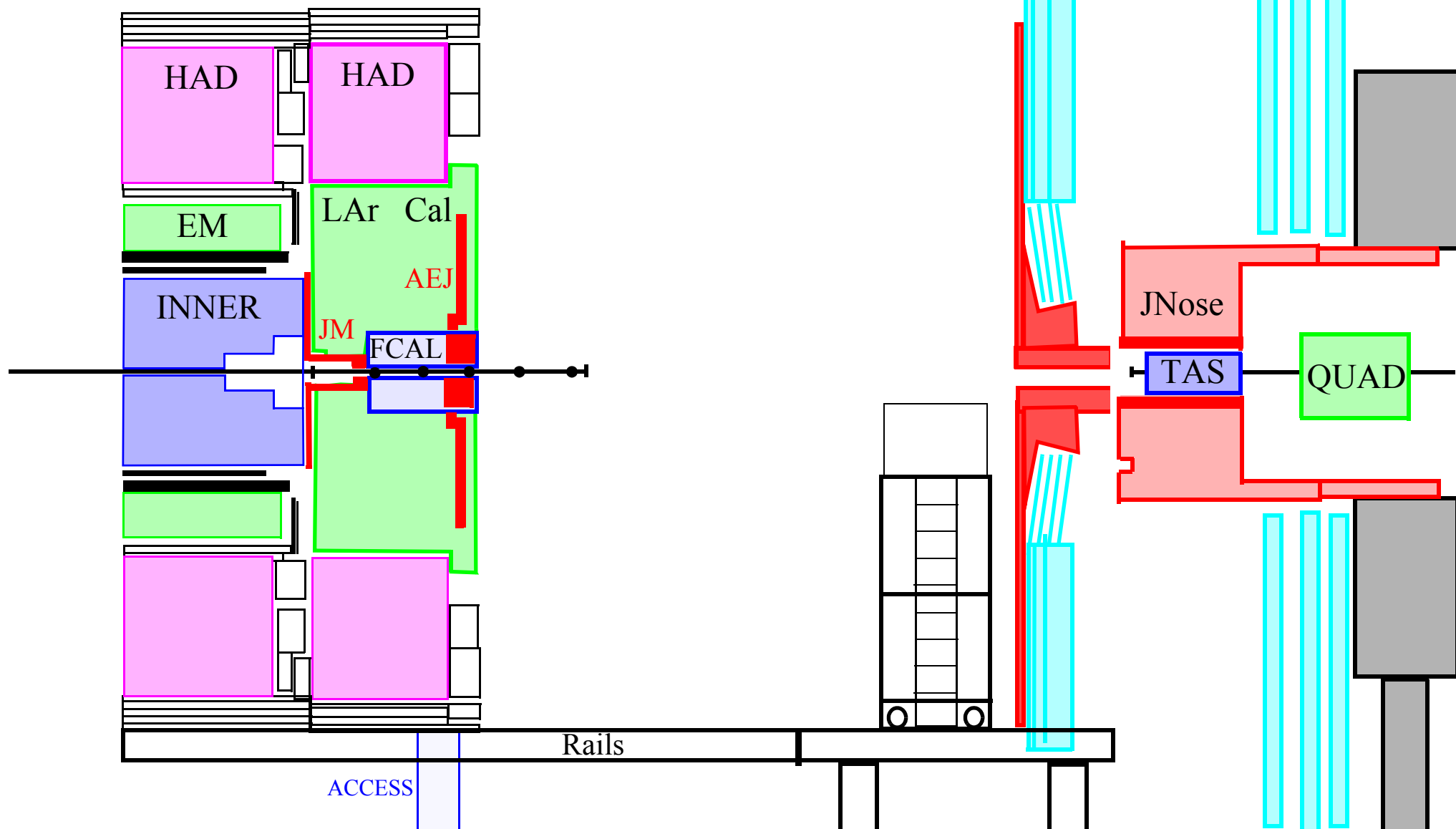


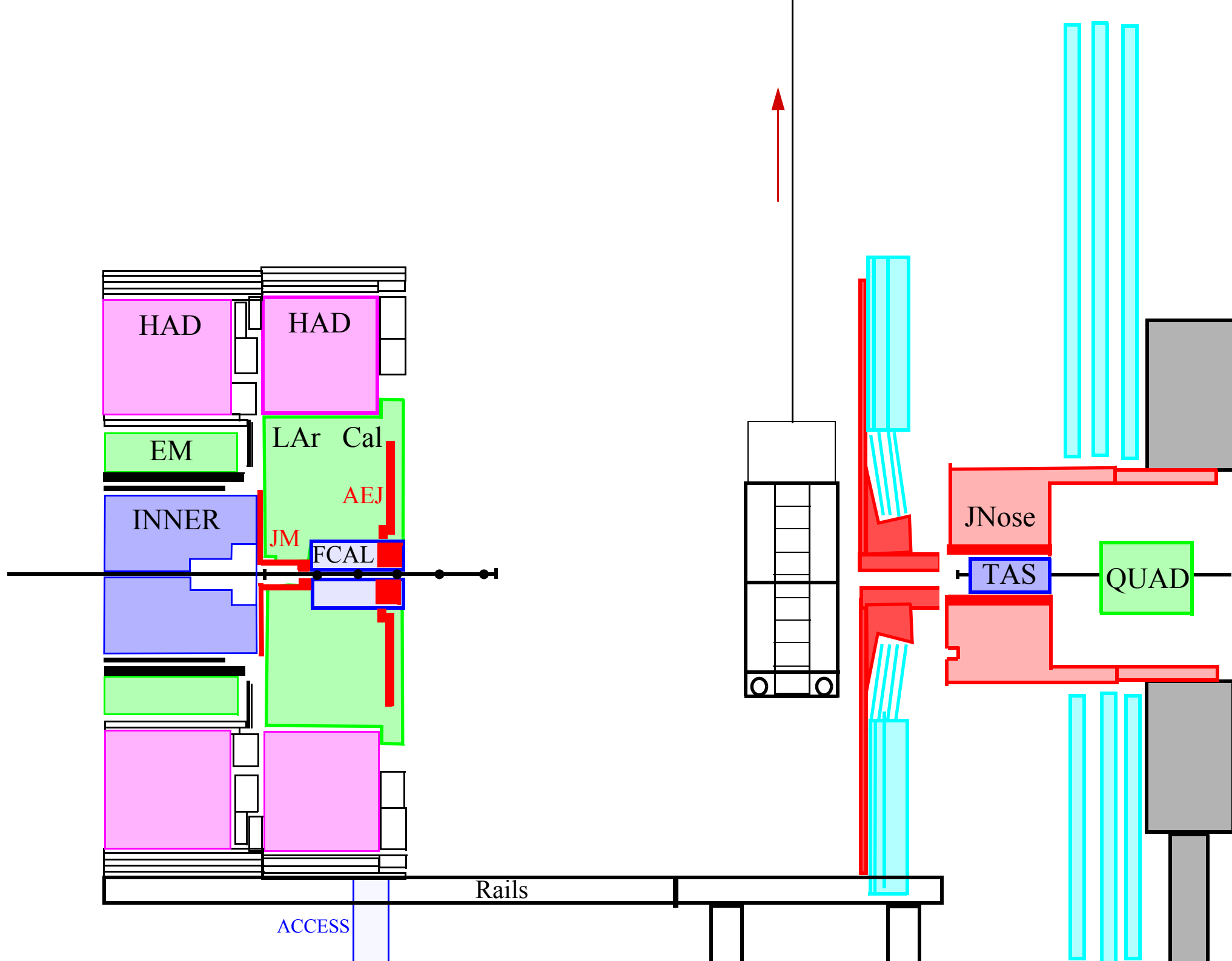


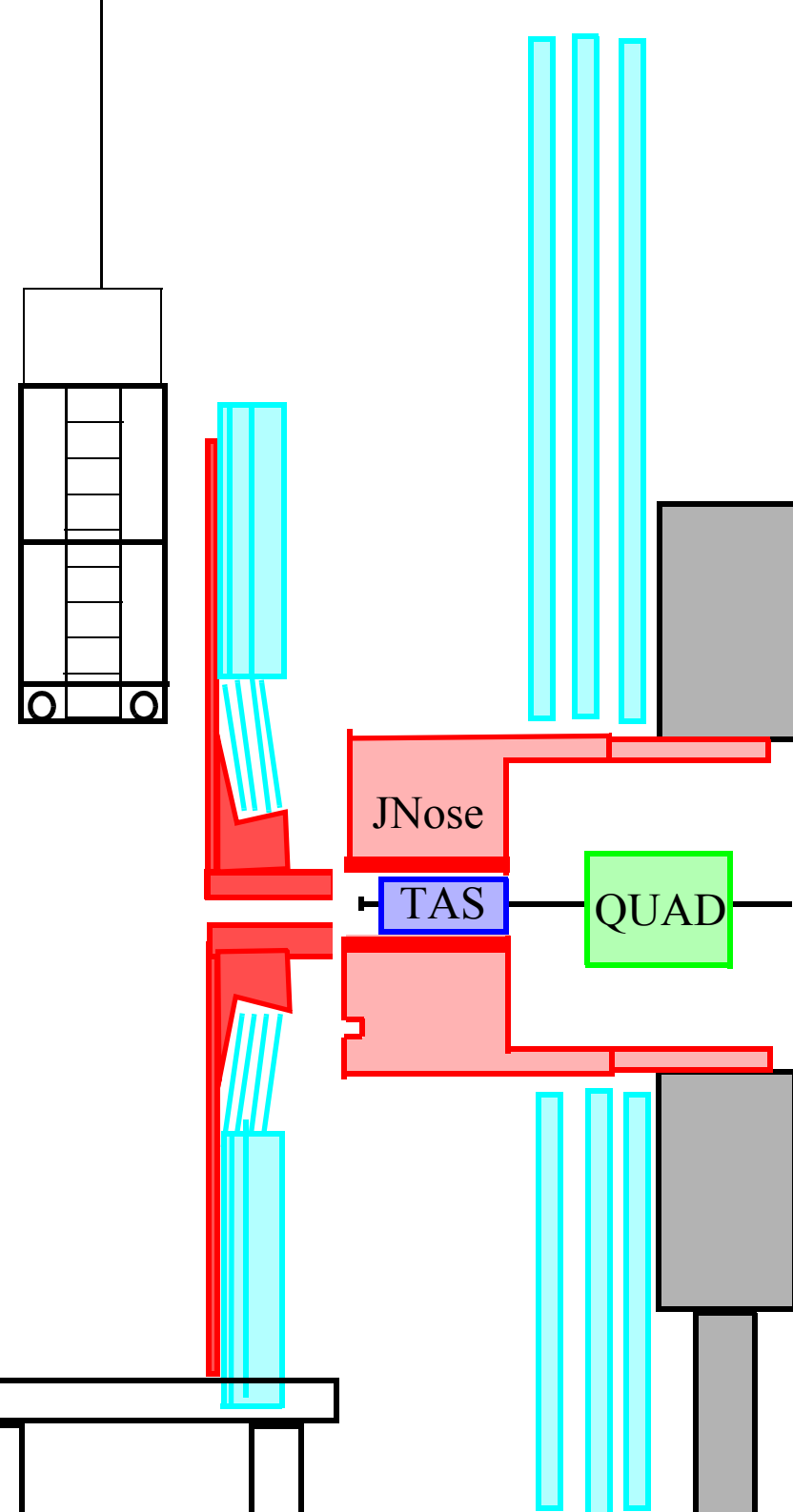
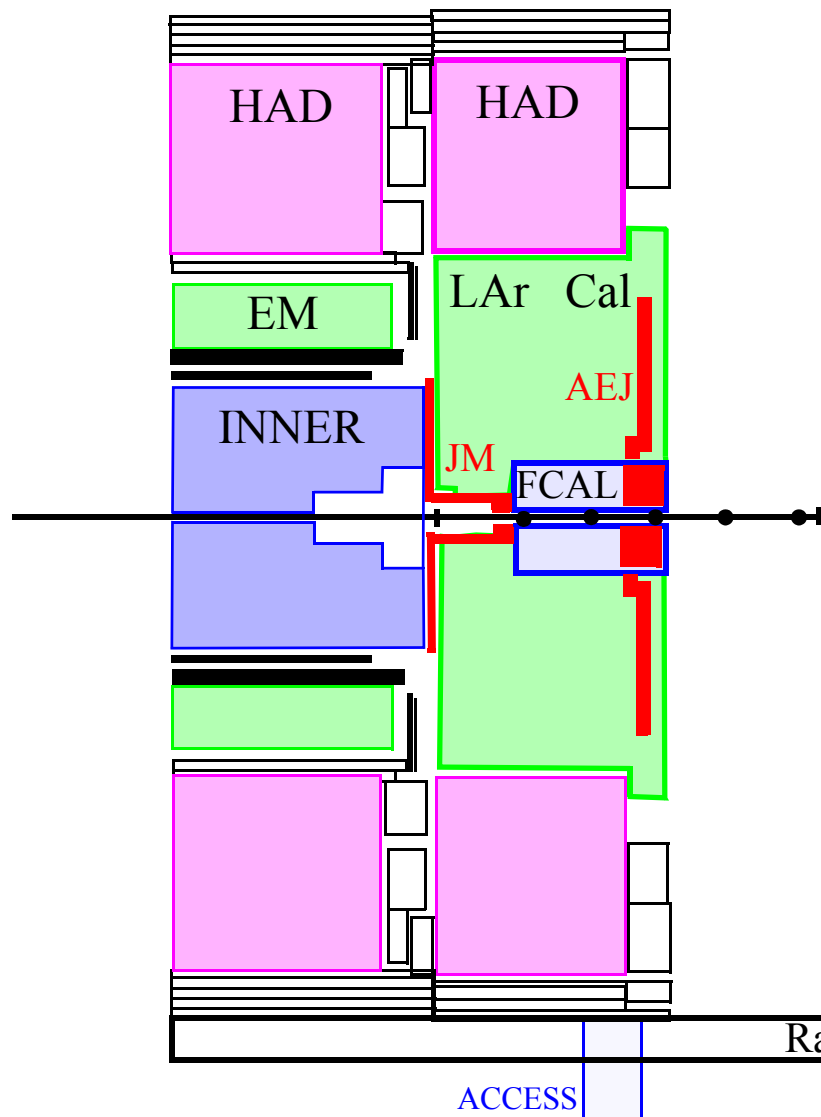


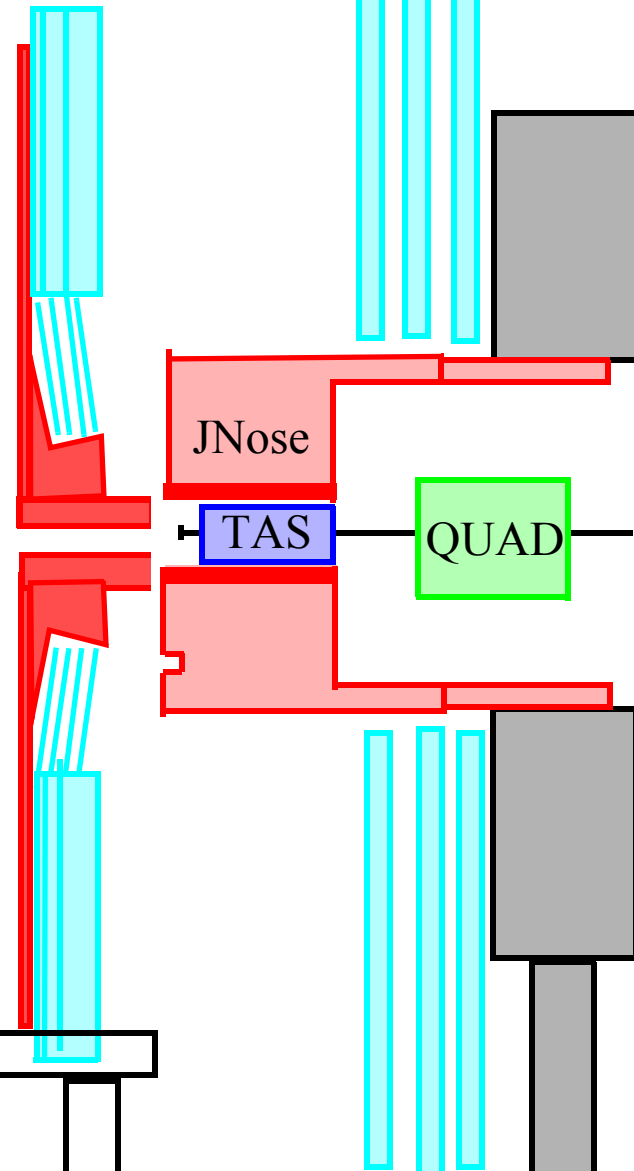
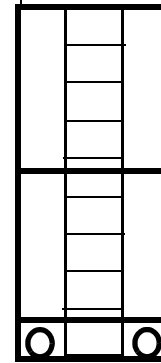
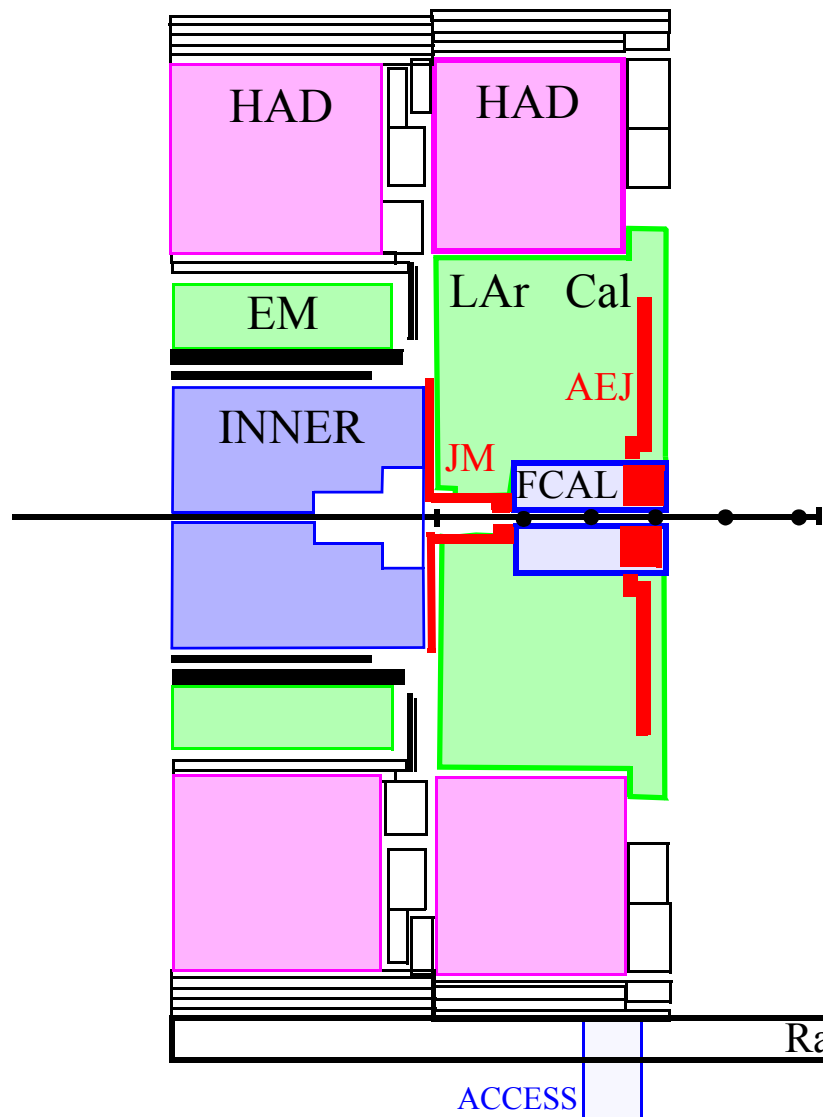


Remove minivans.

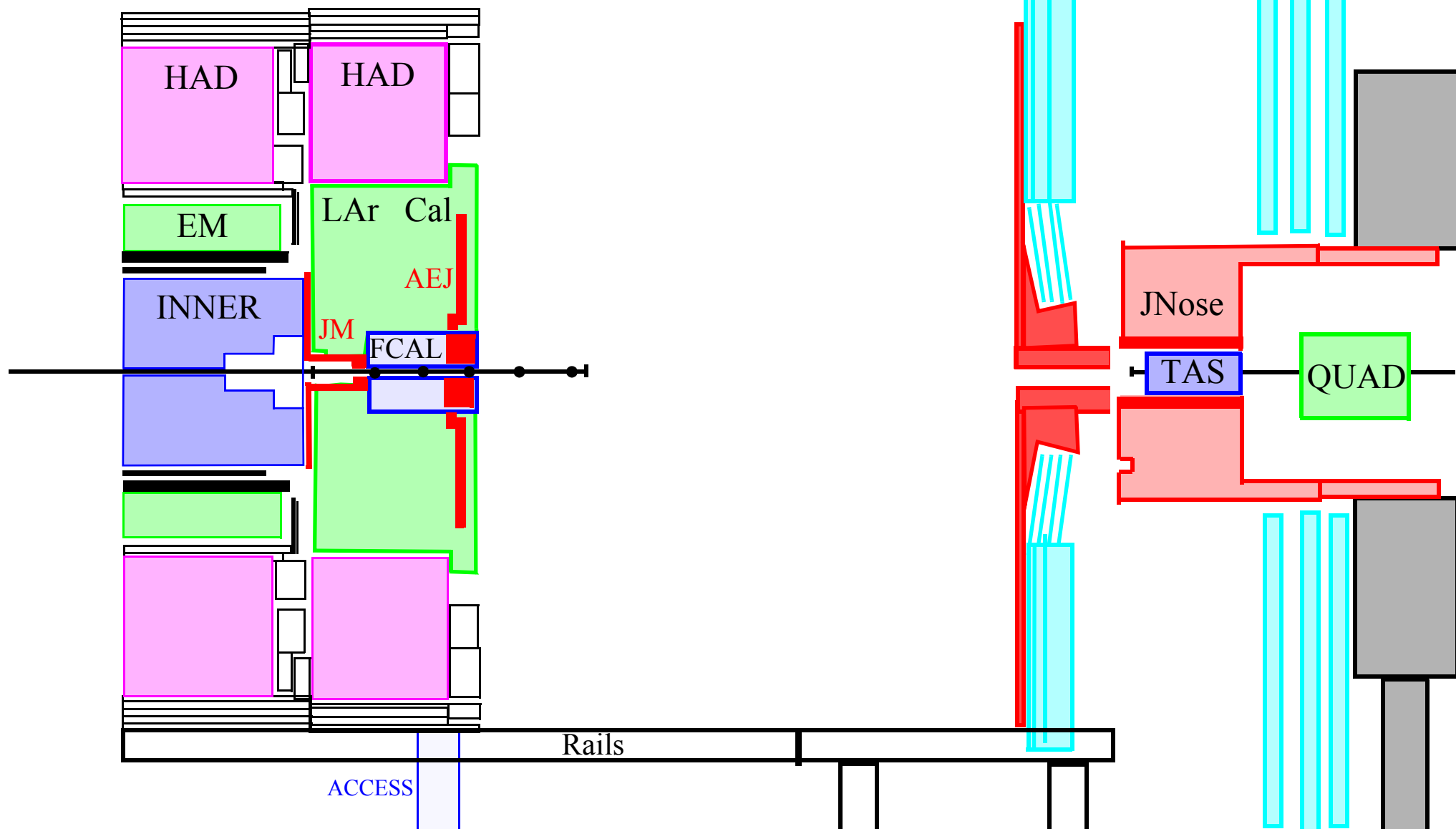


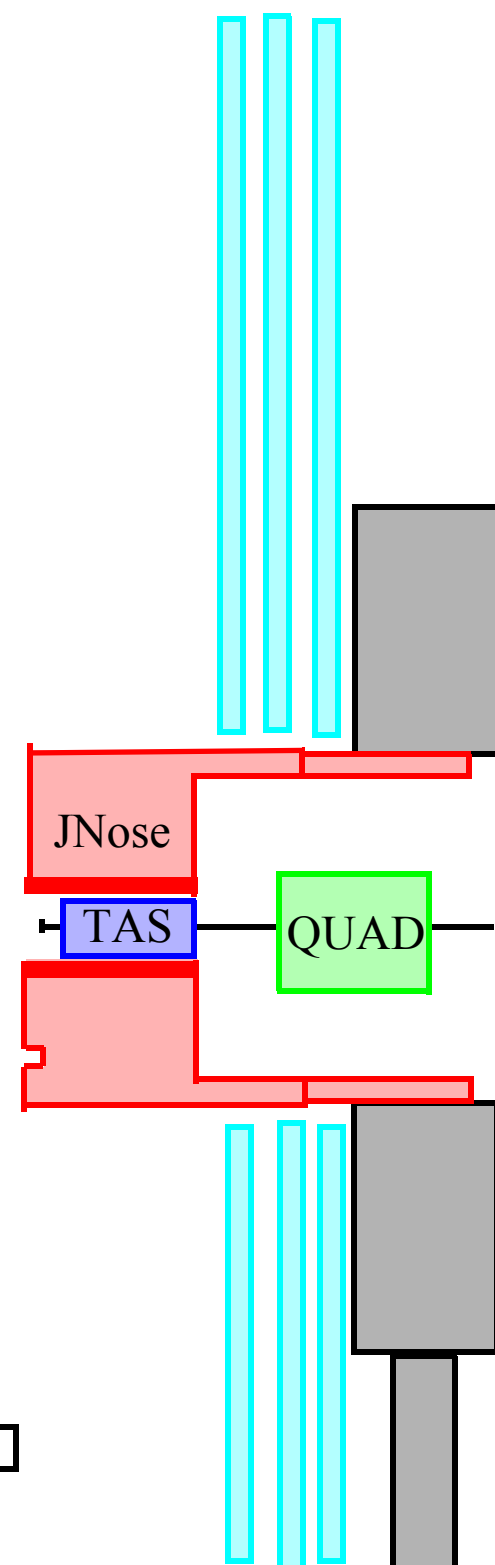
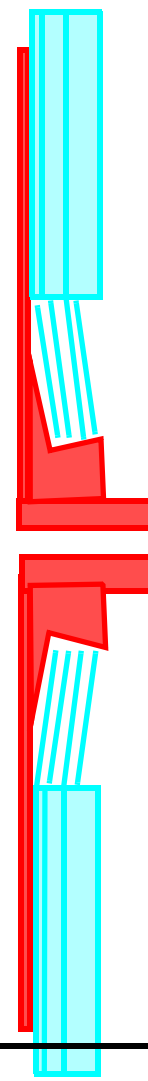
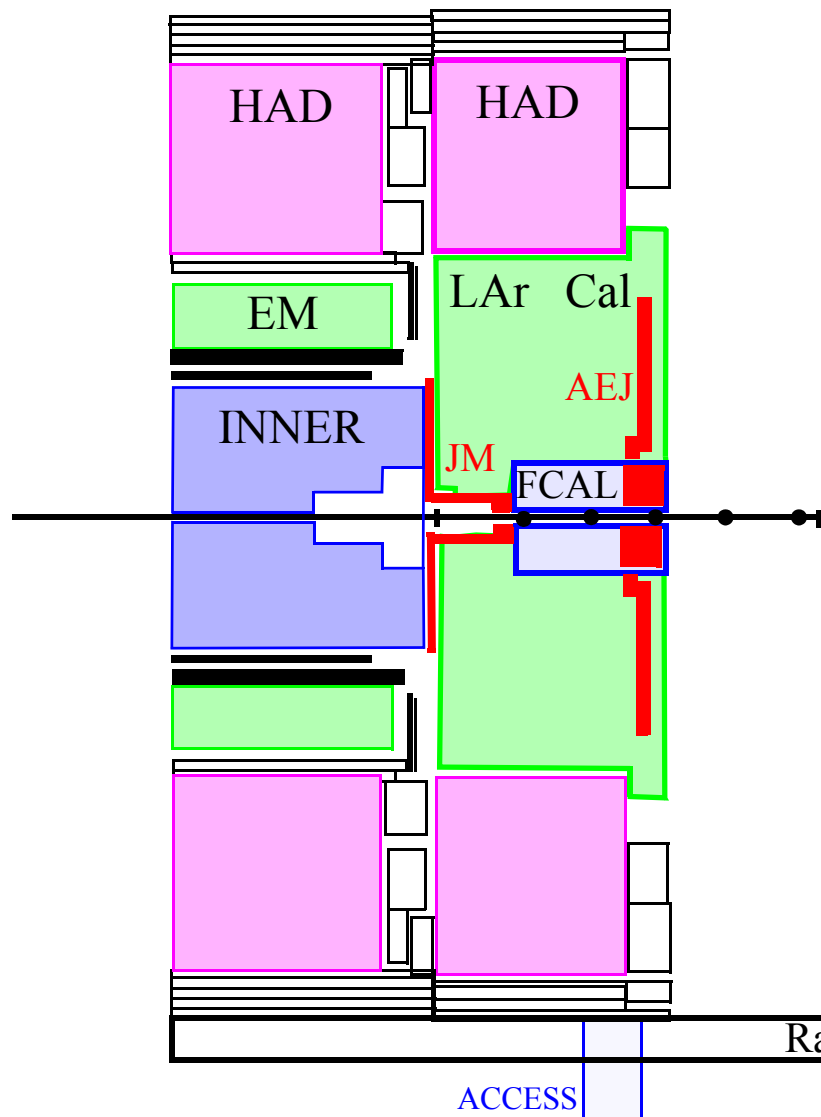


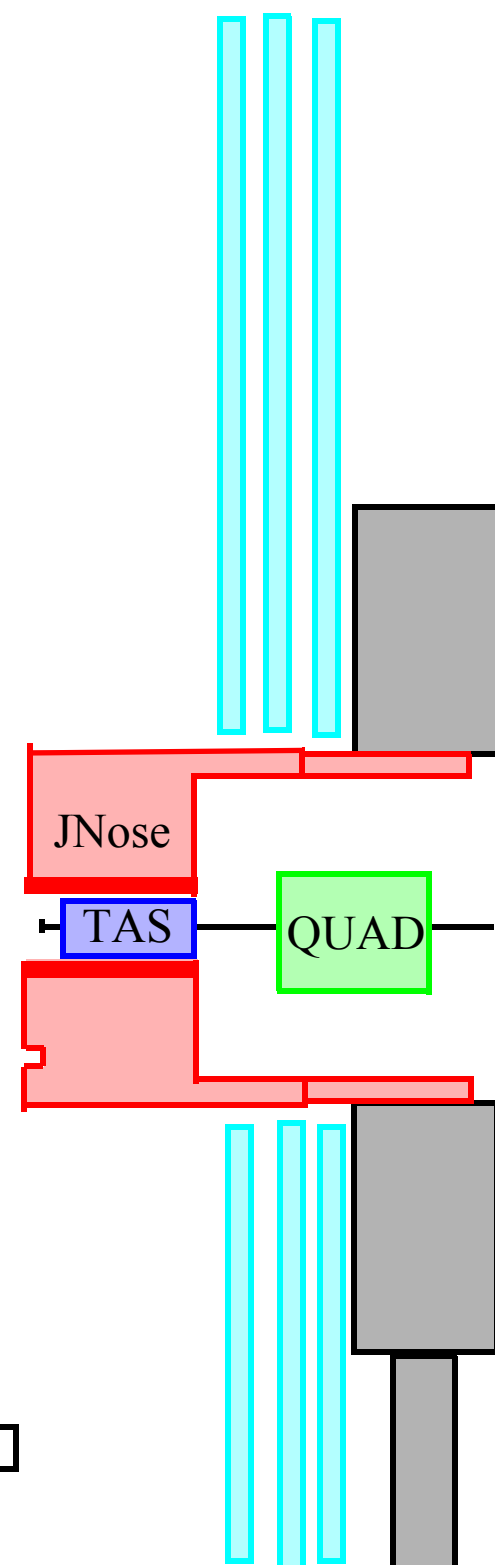
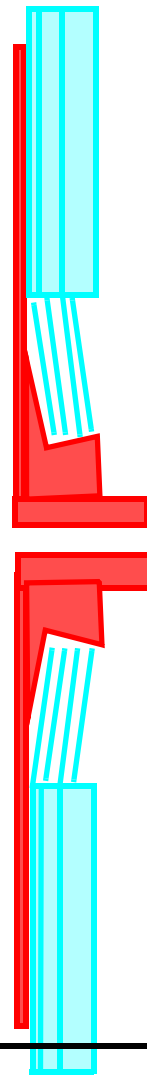
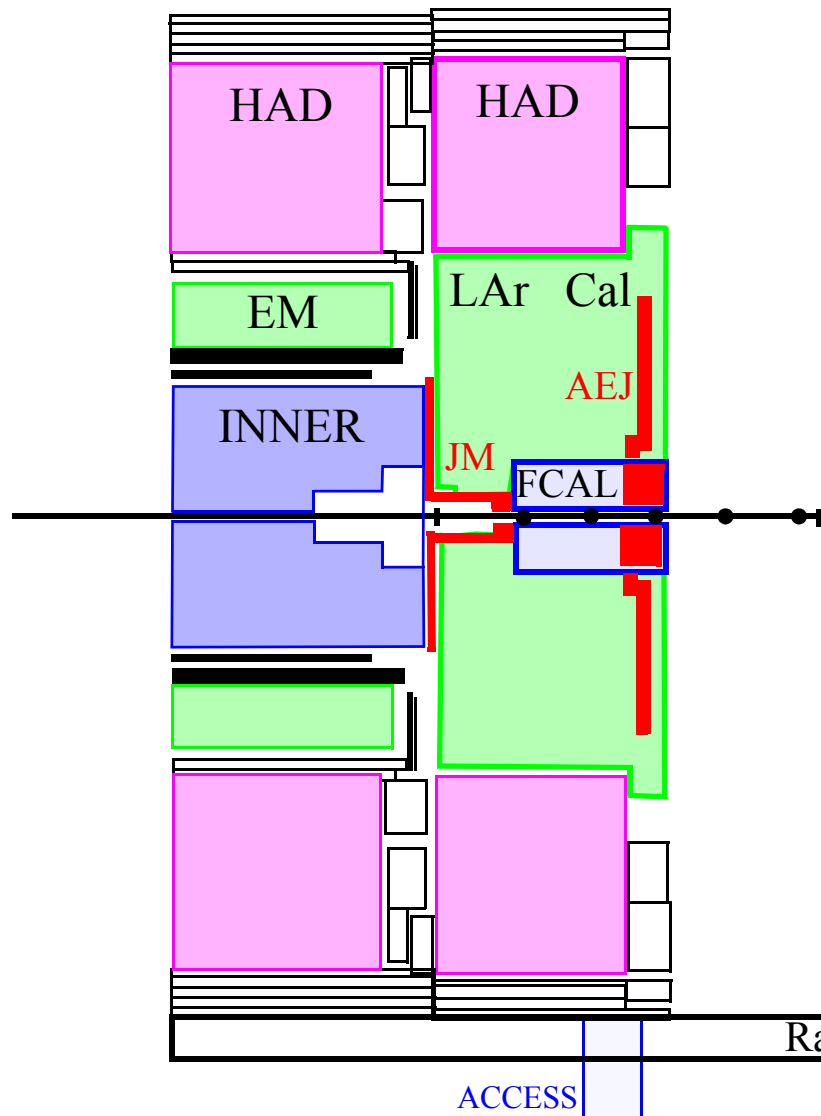


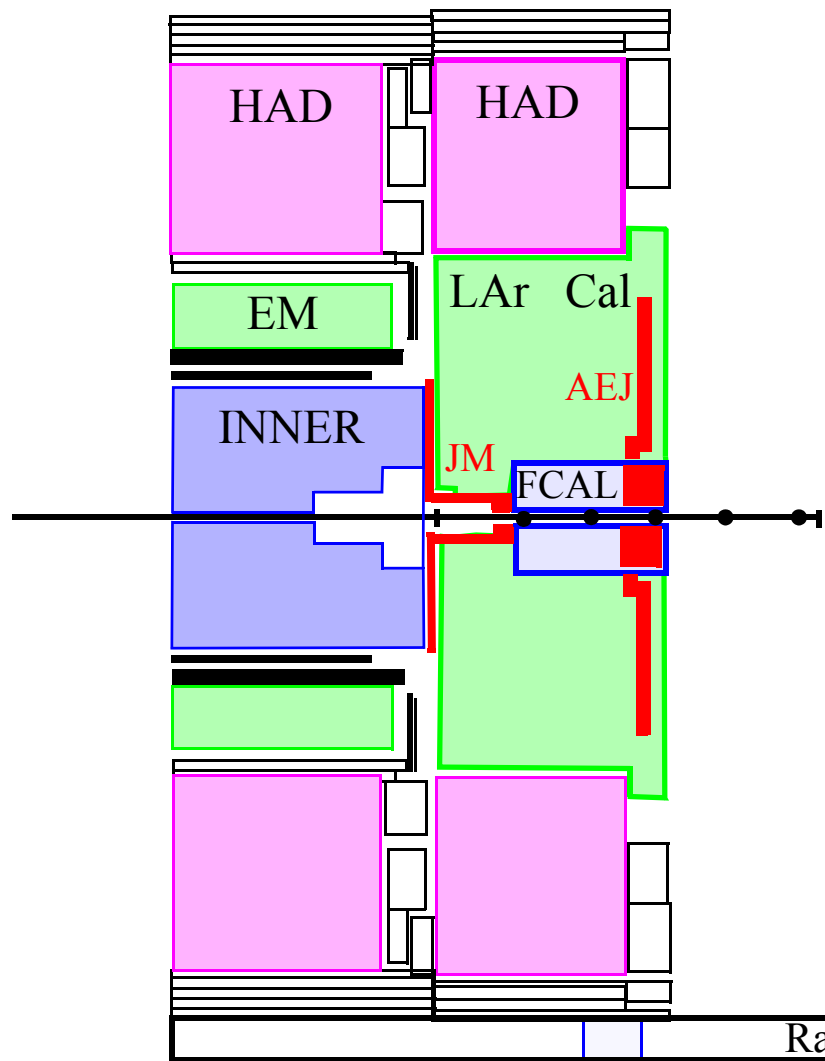


Move JD/SW.





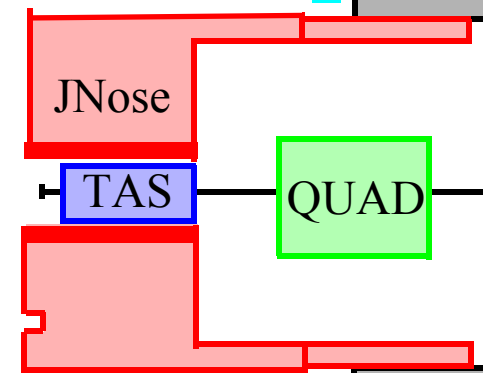
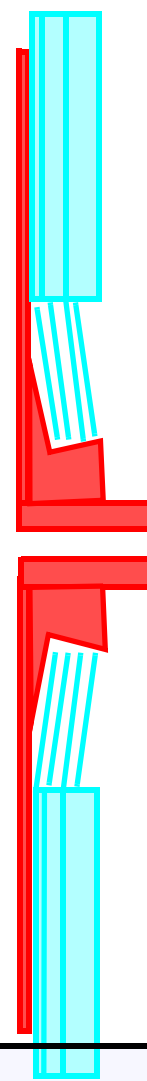
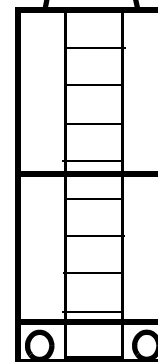




ACCESS

Rails

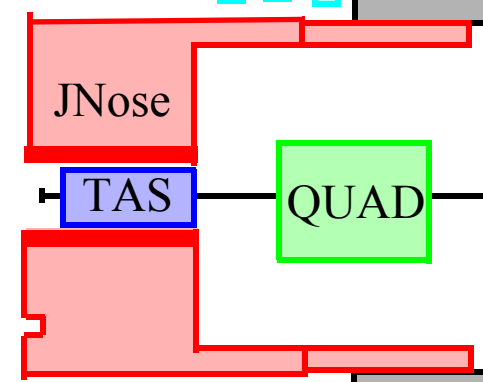
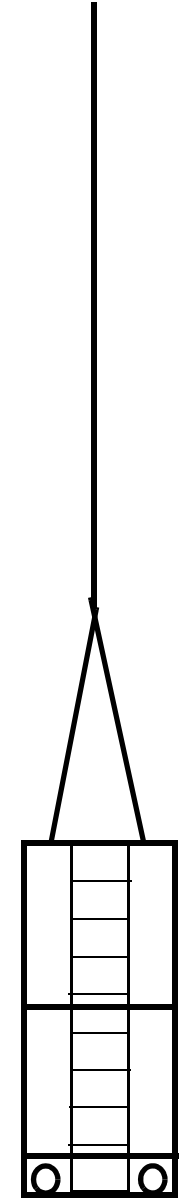
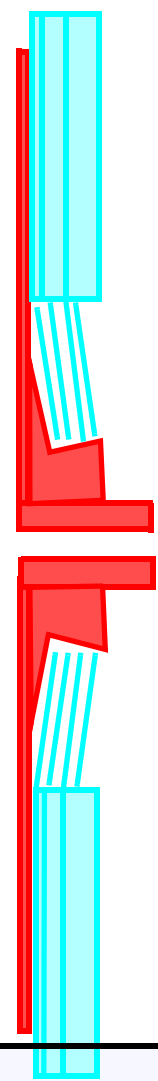
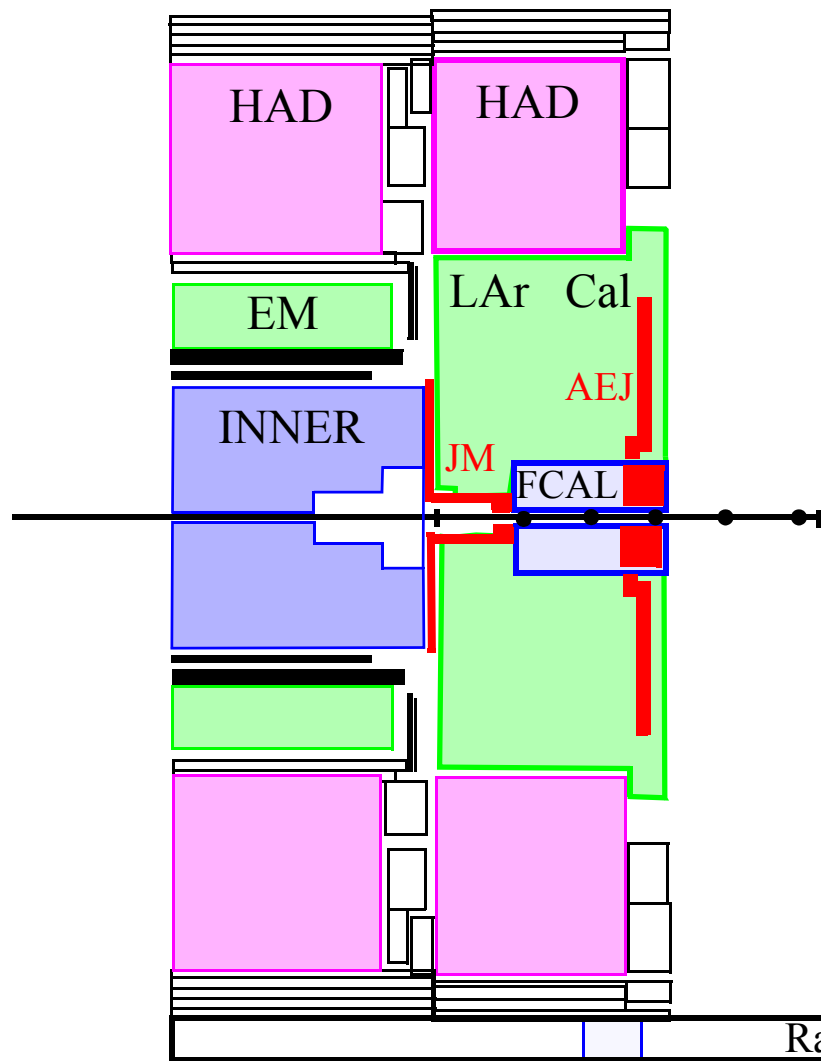
ACCESS

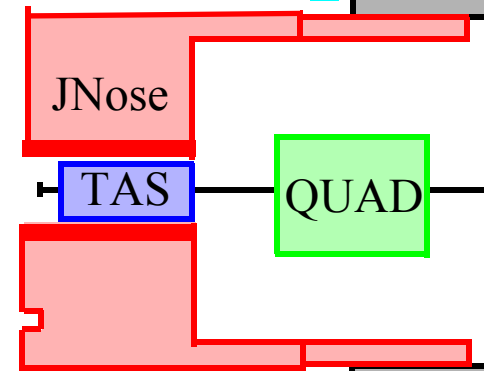
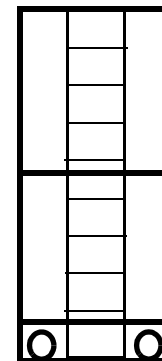
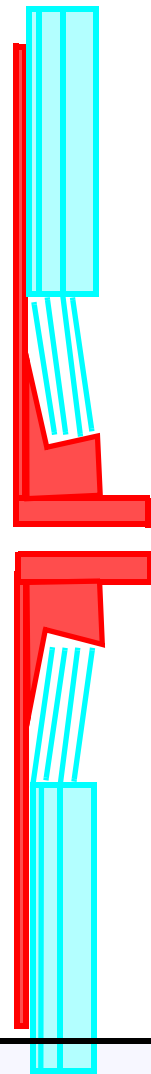
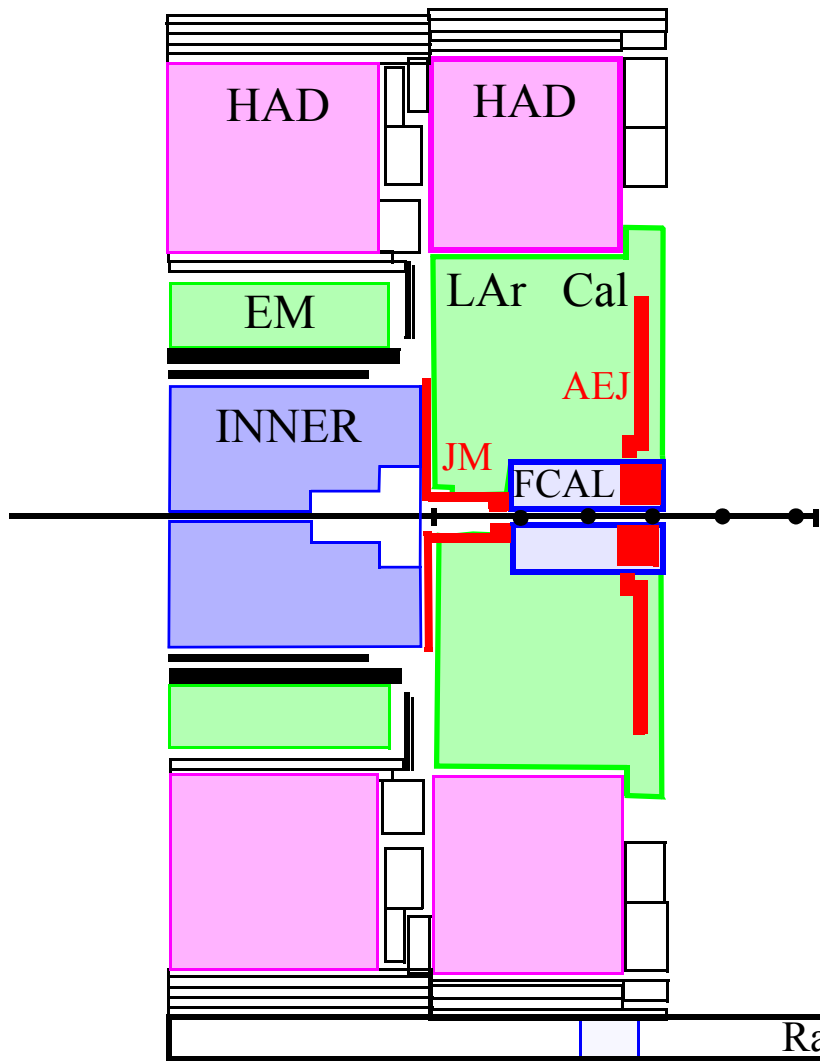


JNose

TAS

QUAD





ACCESS

Rails

ACCESS

JNose

TAS

QUAD

HAD

HAD

EM

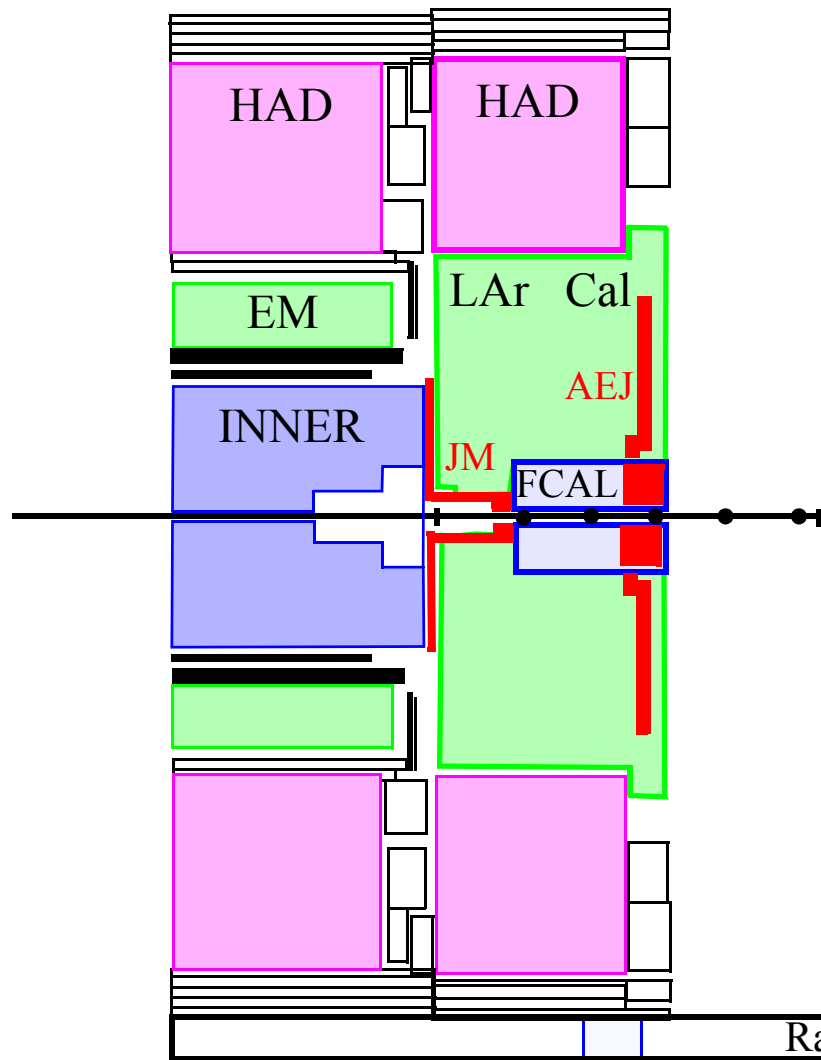
LAr Cal

AEJ

JM

FCAL

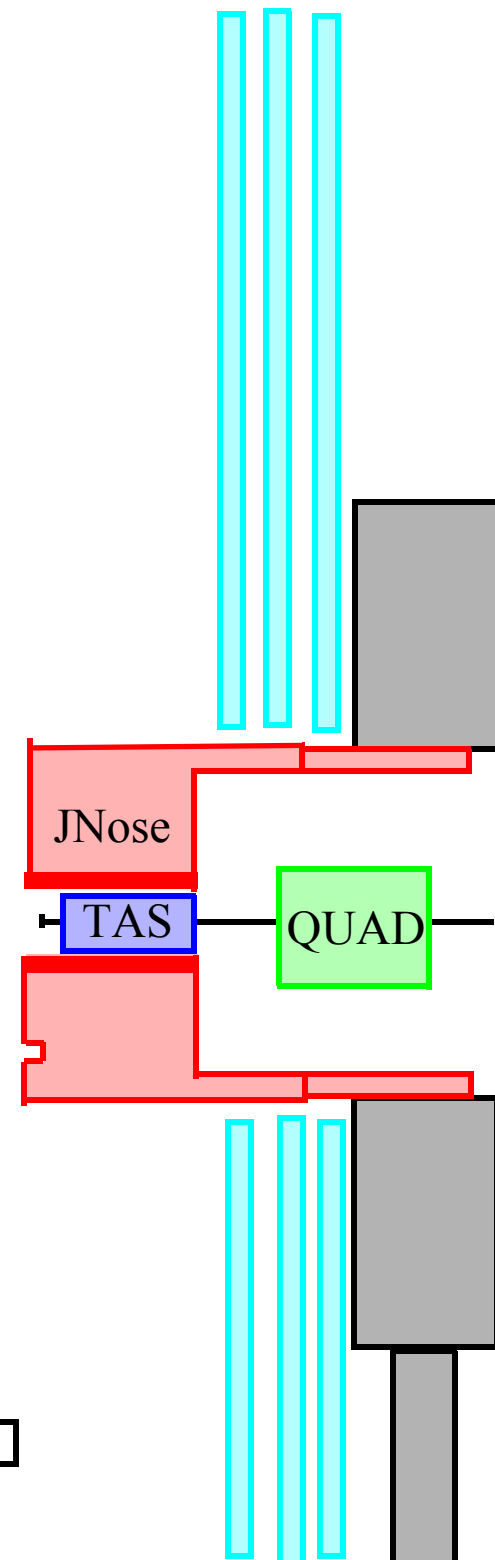
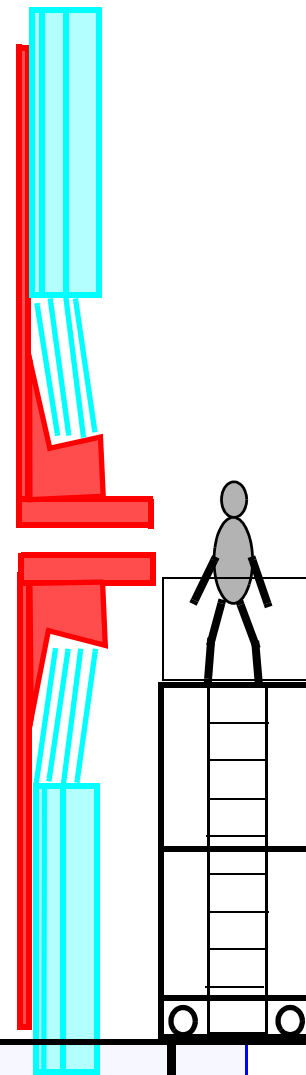
INNER



ACCESS

Rails

ACCESS

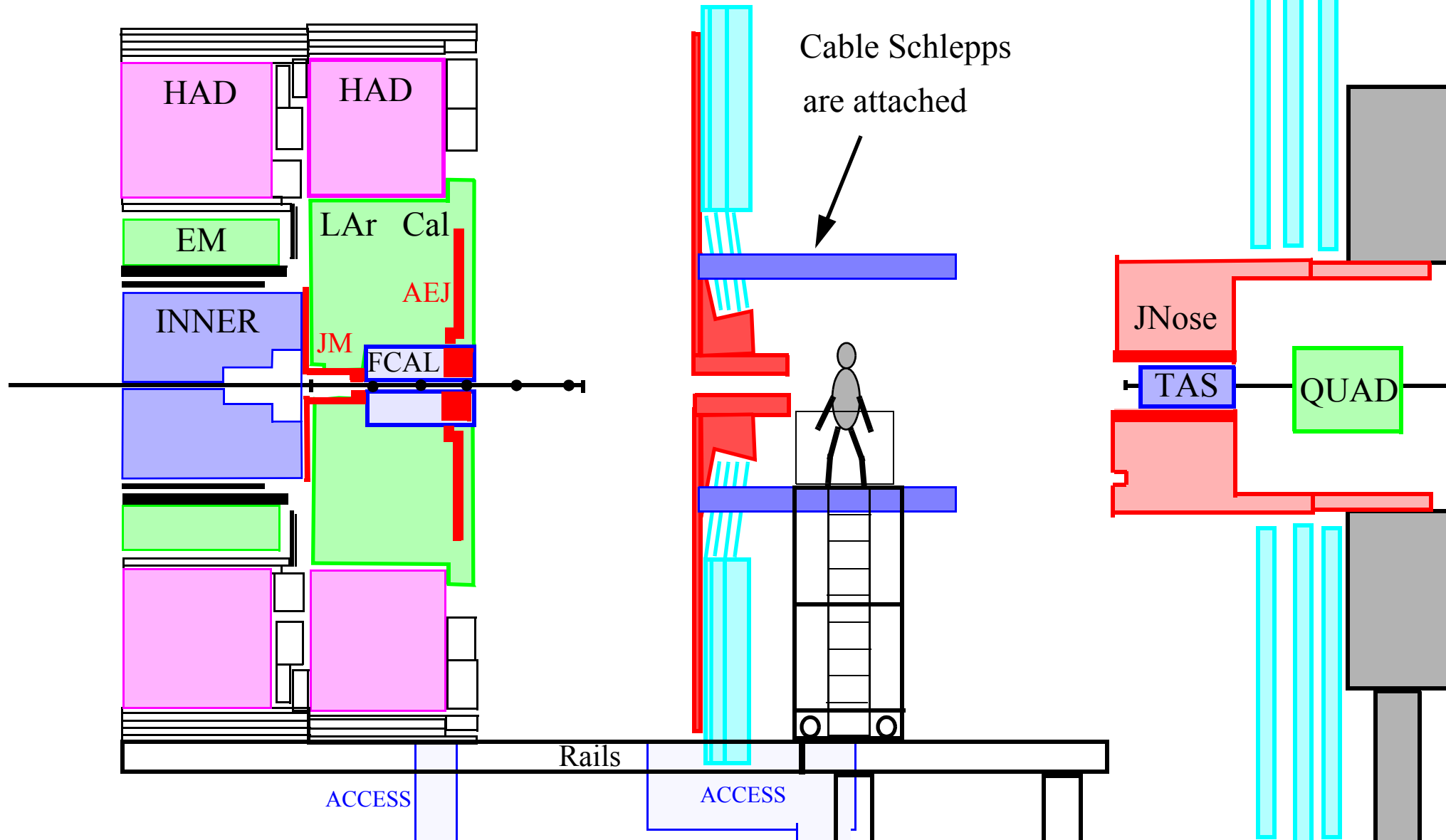


JNose

TAS

QUAD

Attach cable schlepps

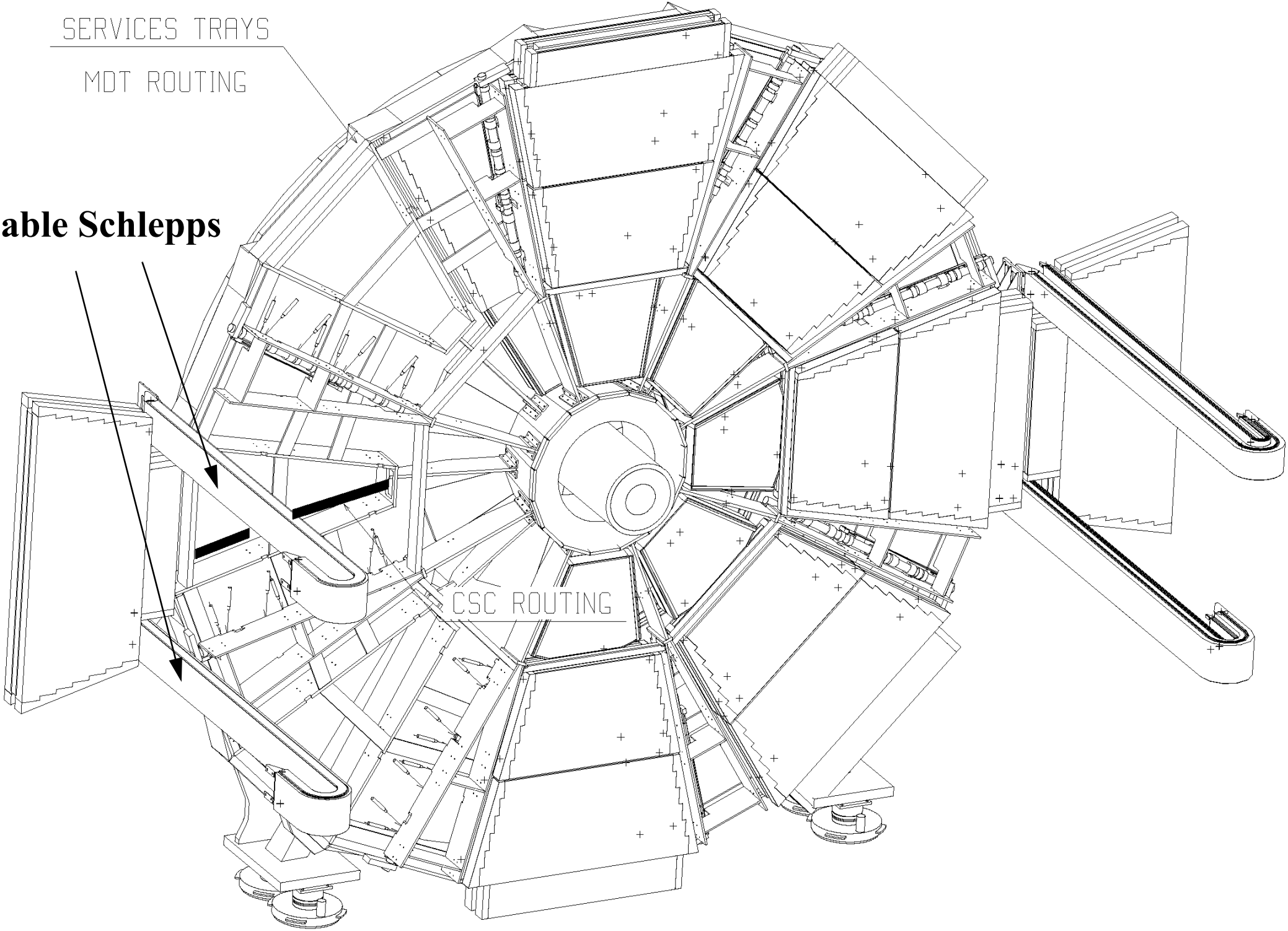


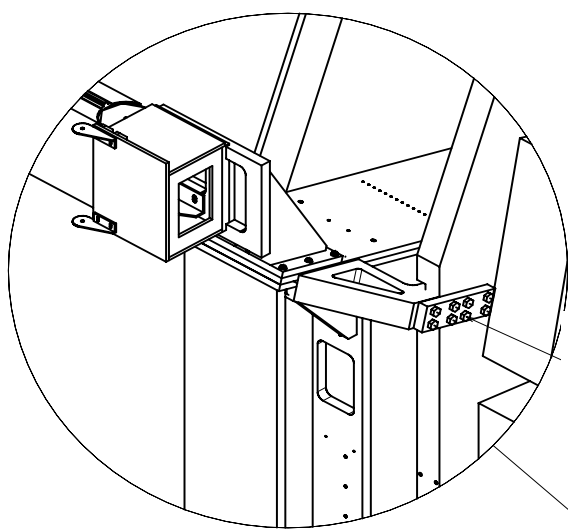
SERVICES TRAYS

MDT ROUTING

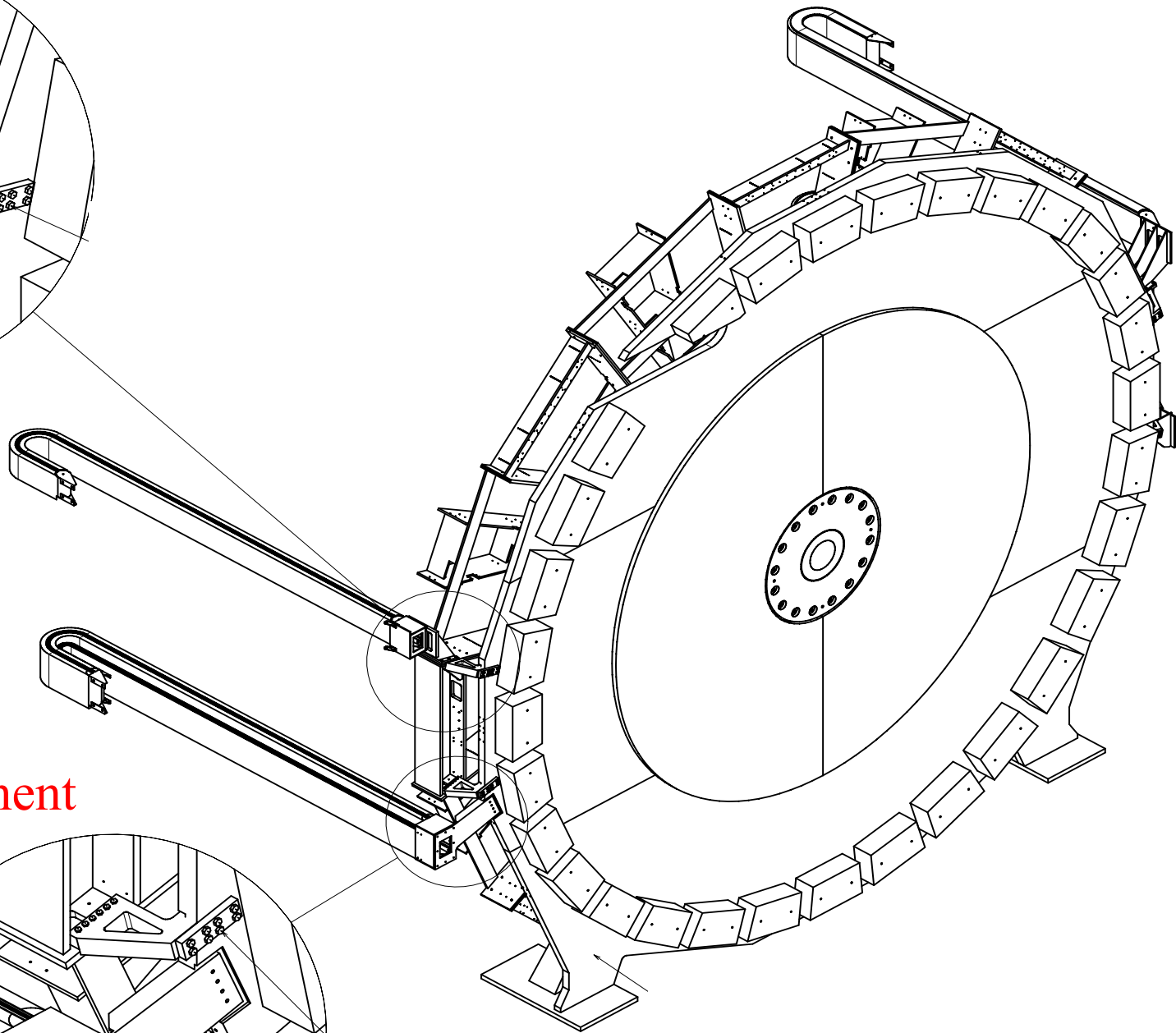
Cable Schlepps

CSC ROUTING

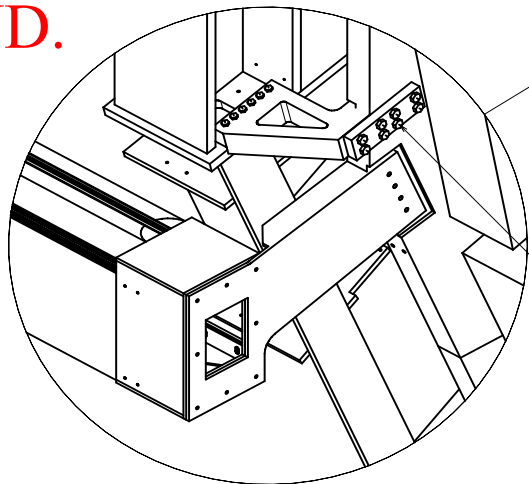


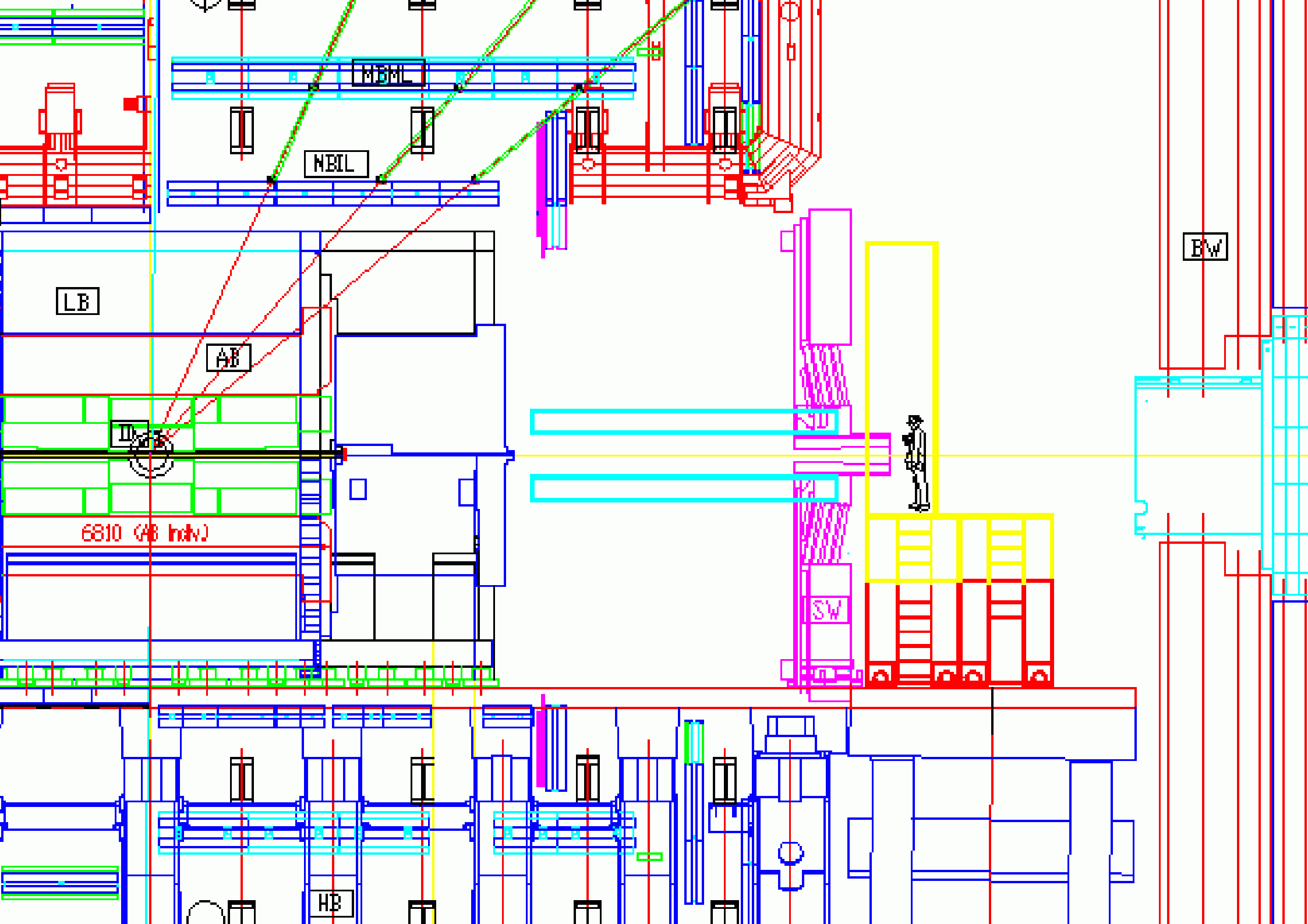


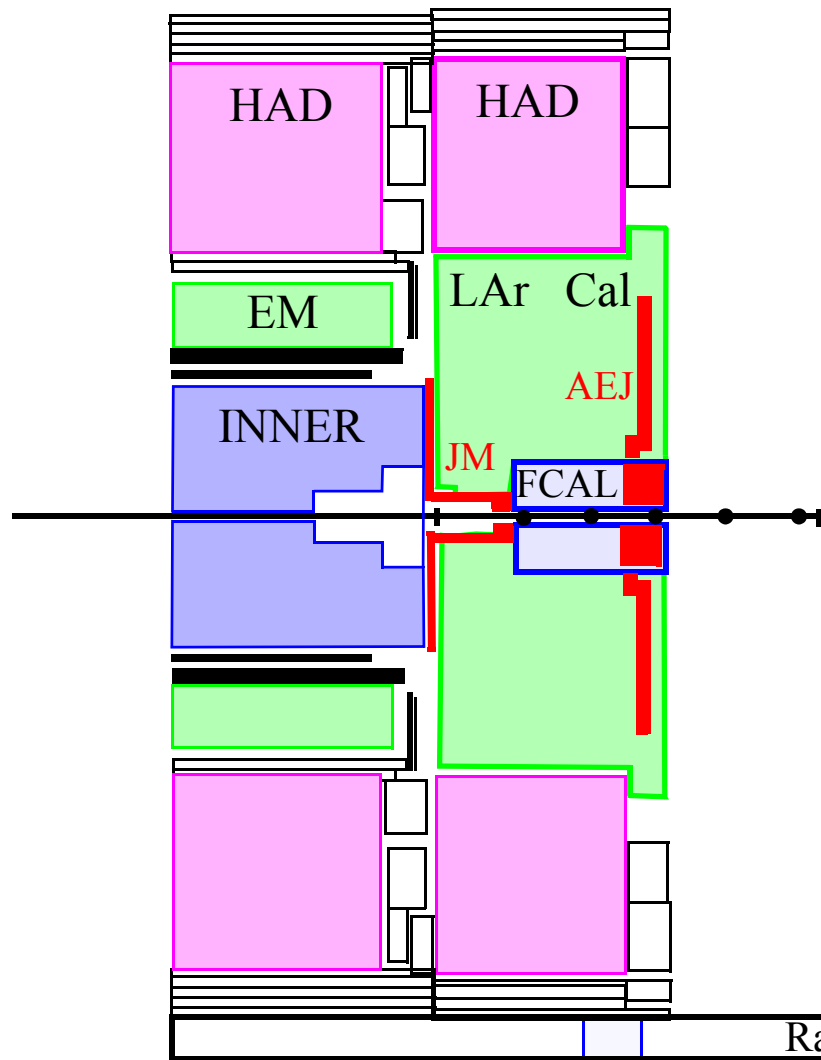
3 attachments
to the SW



One attachment
to the JD.



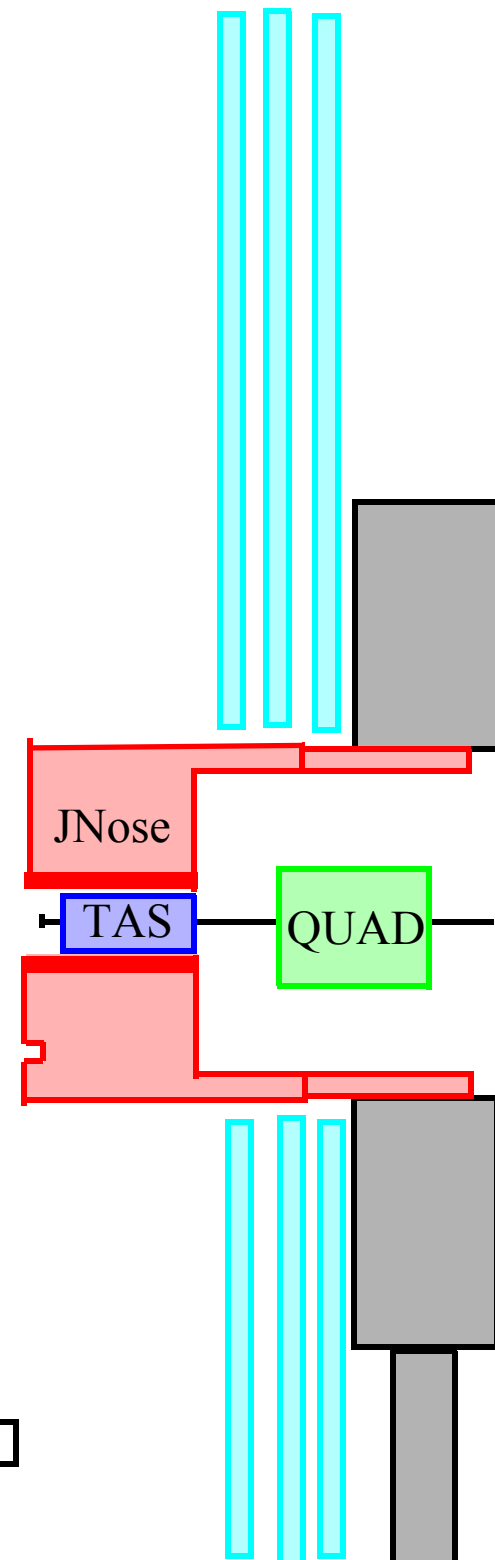
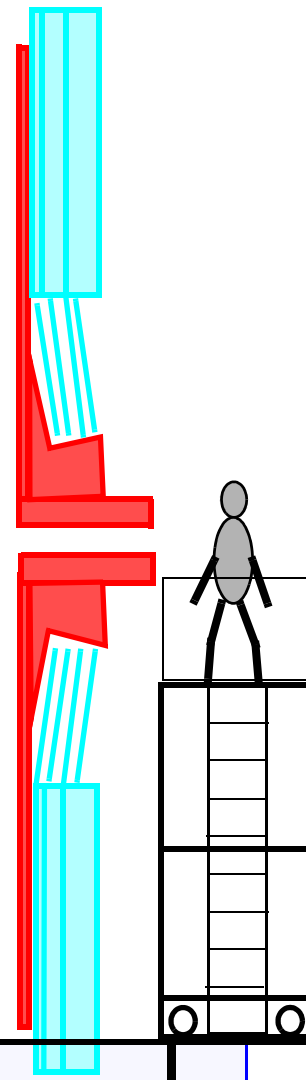




ACCESS

Rails

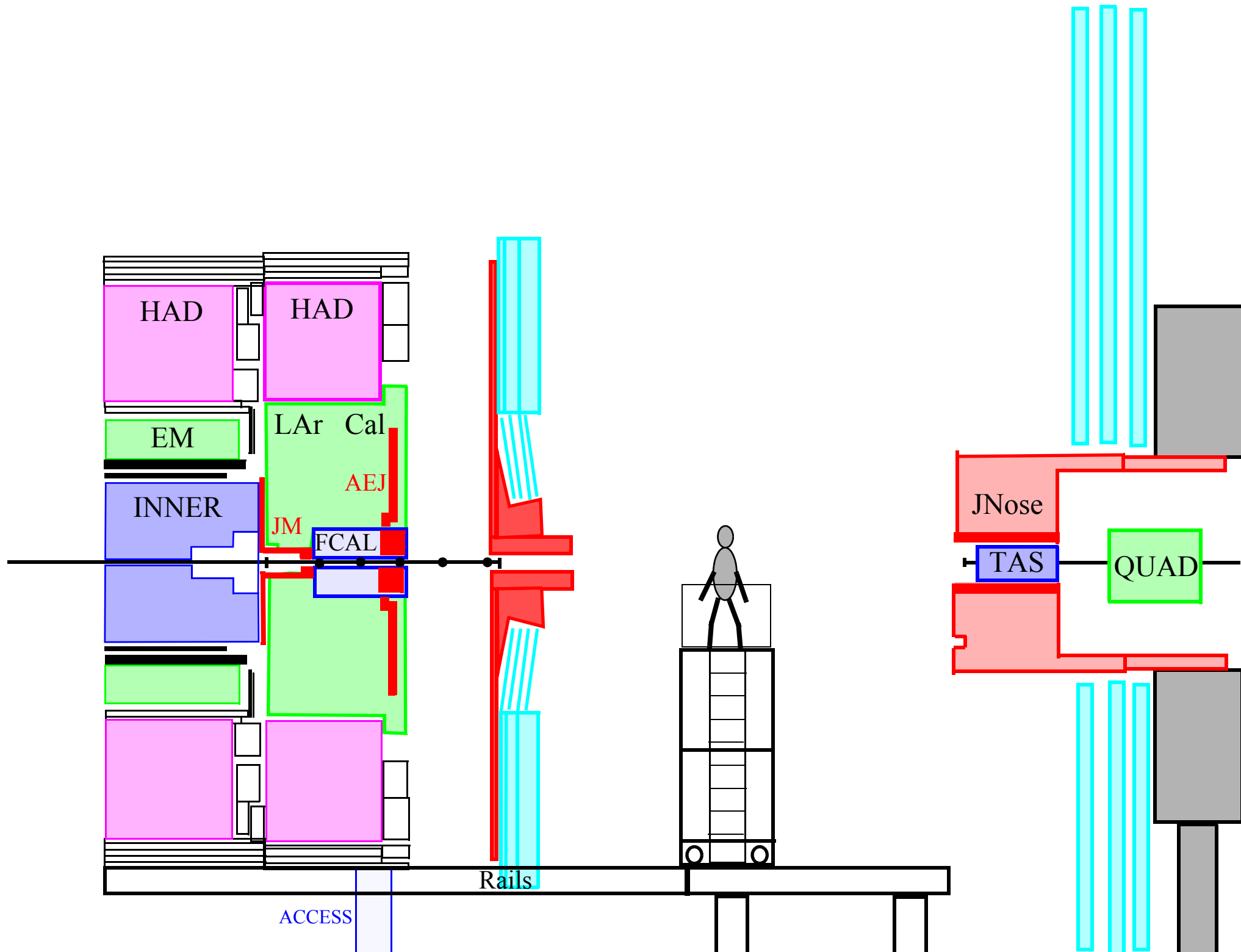
ACCESS

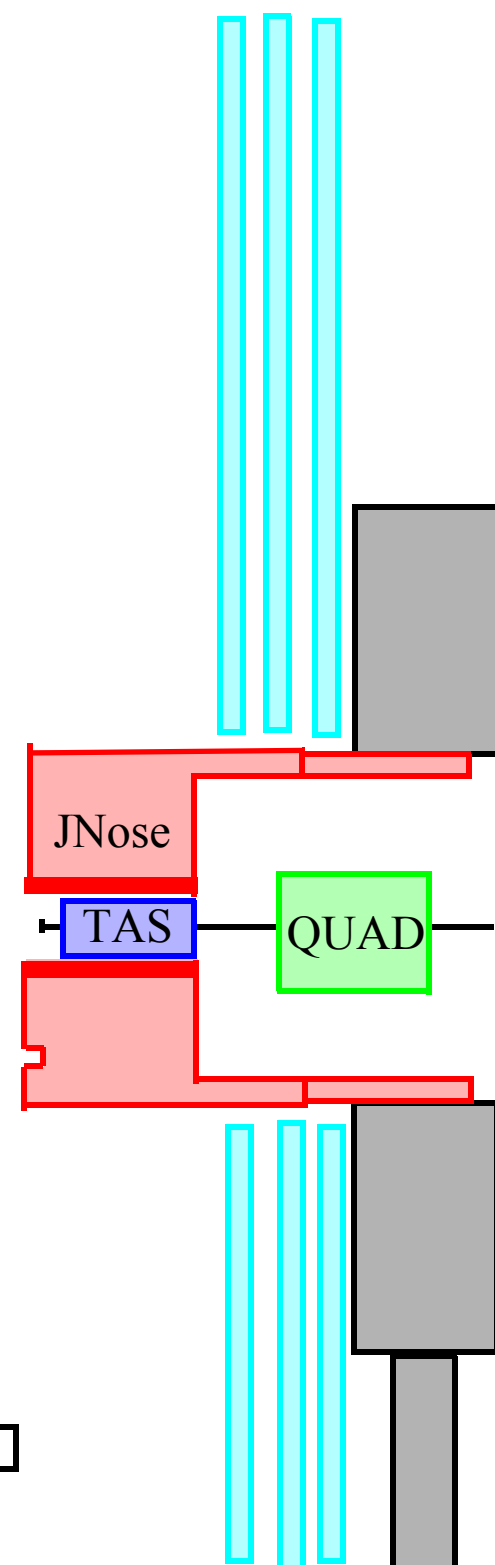
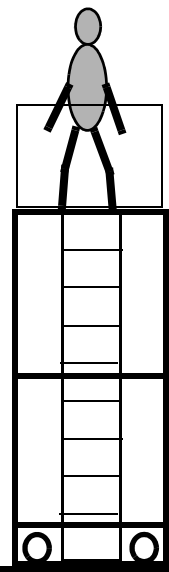
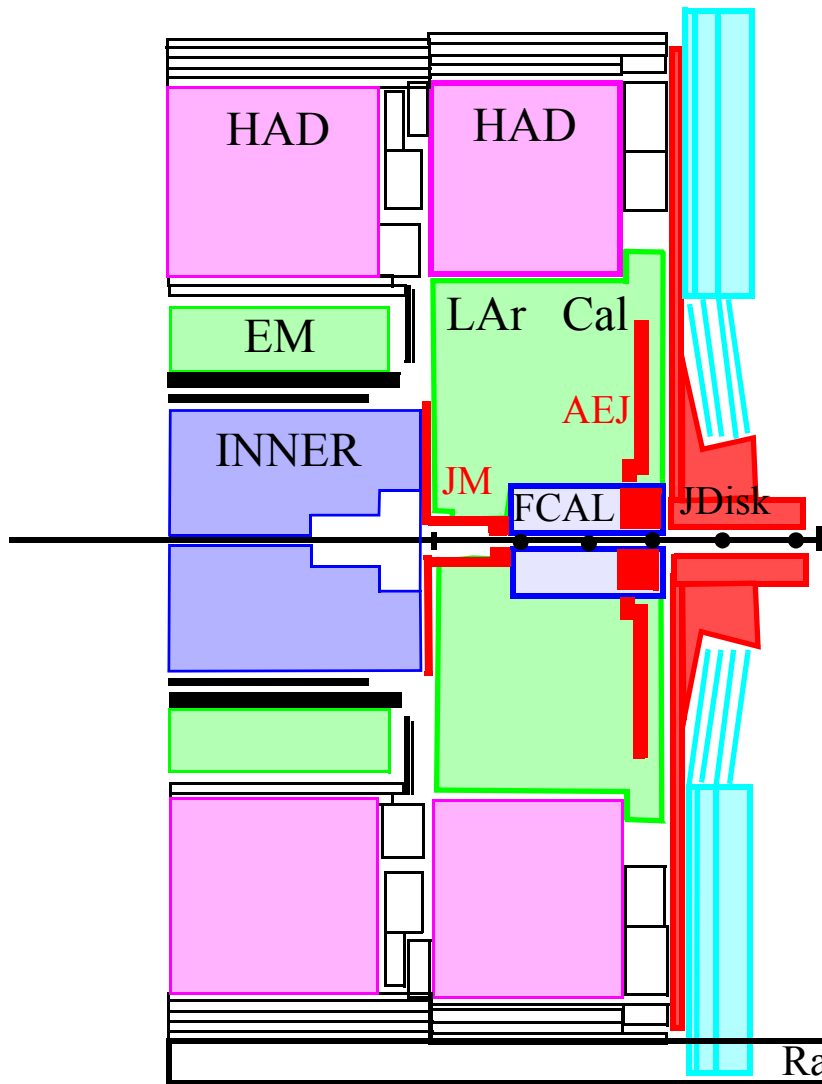


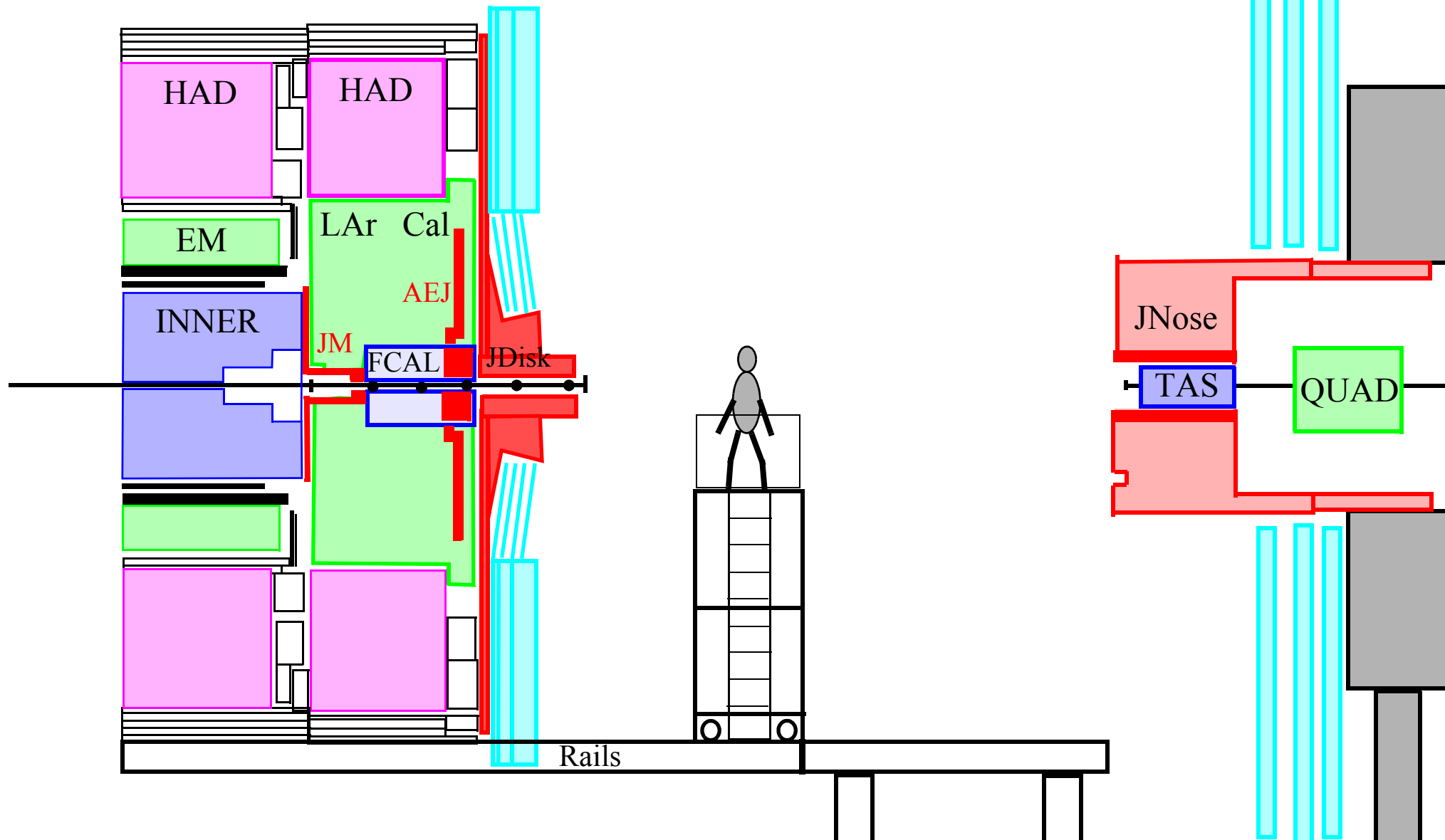
JNose

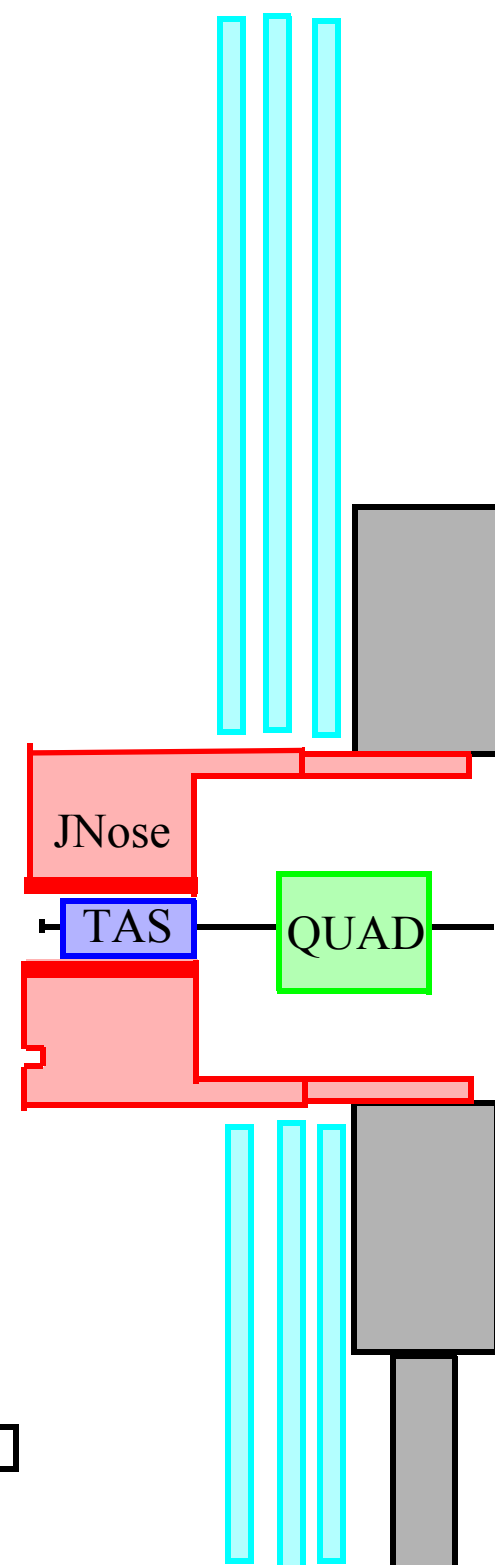
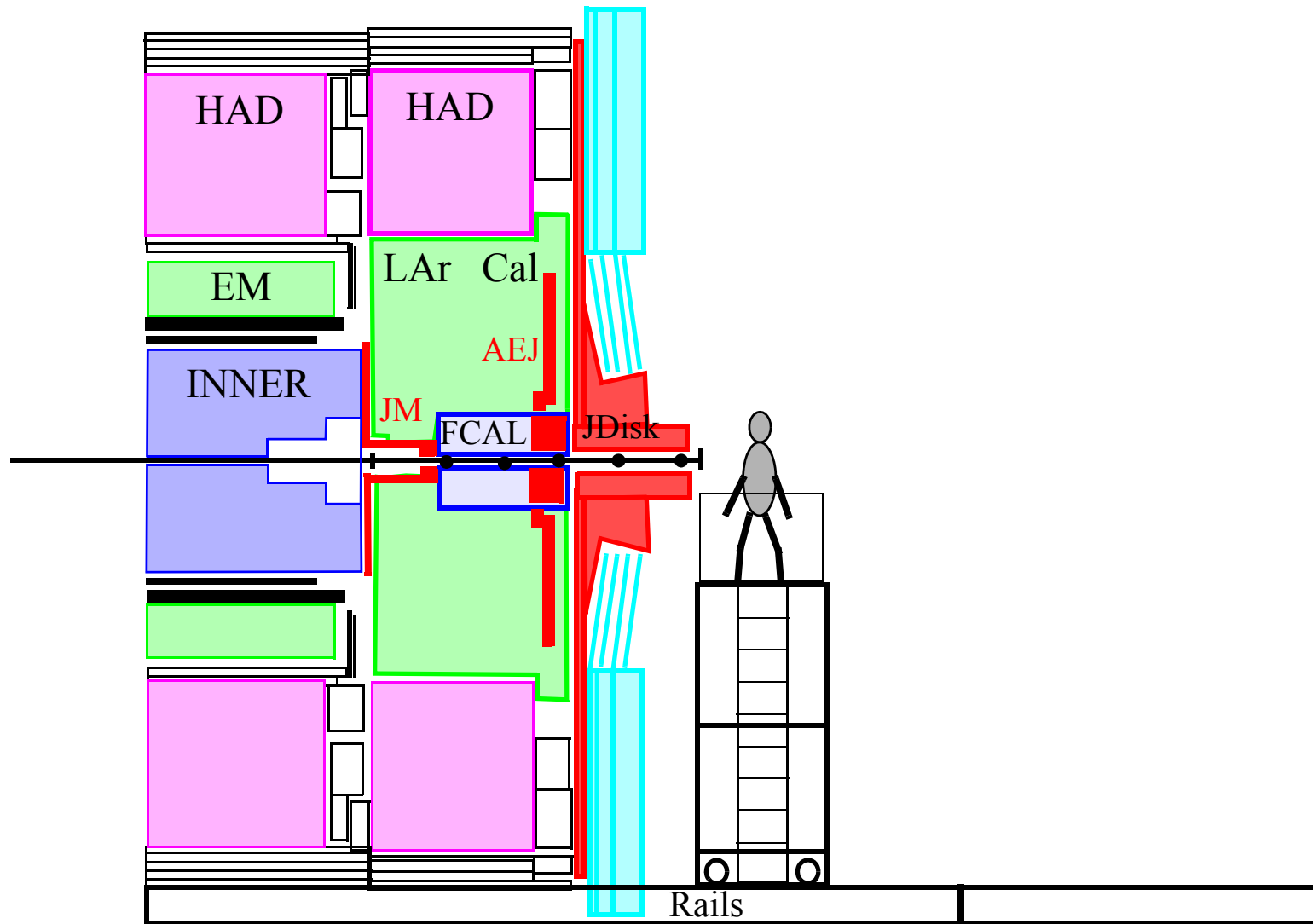
TAS

QUAD



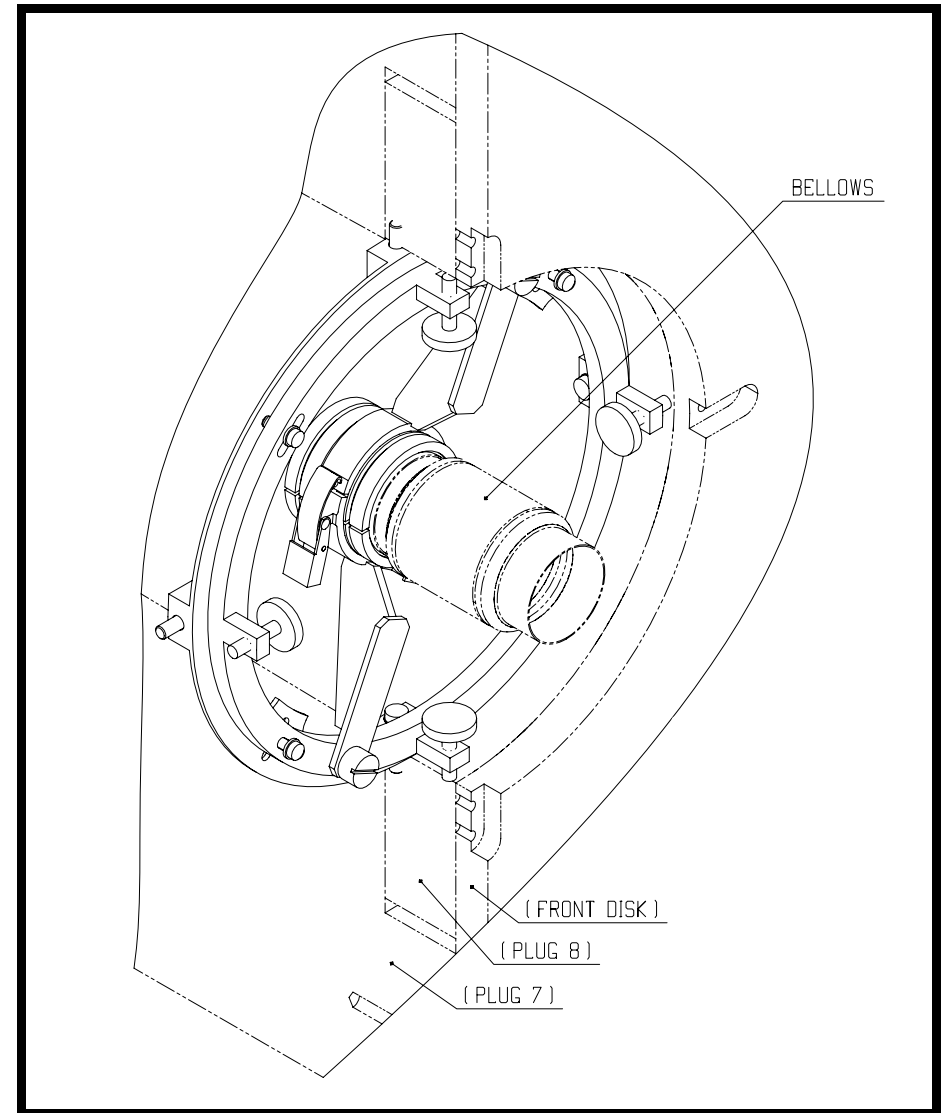
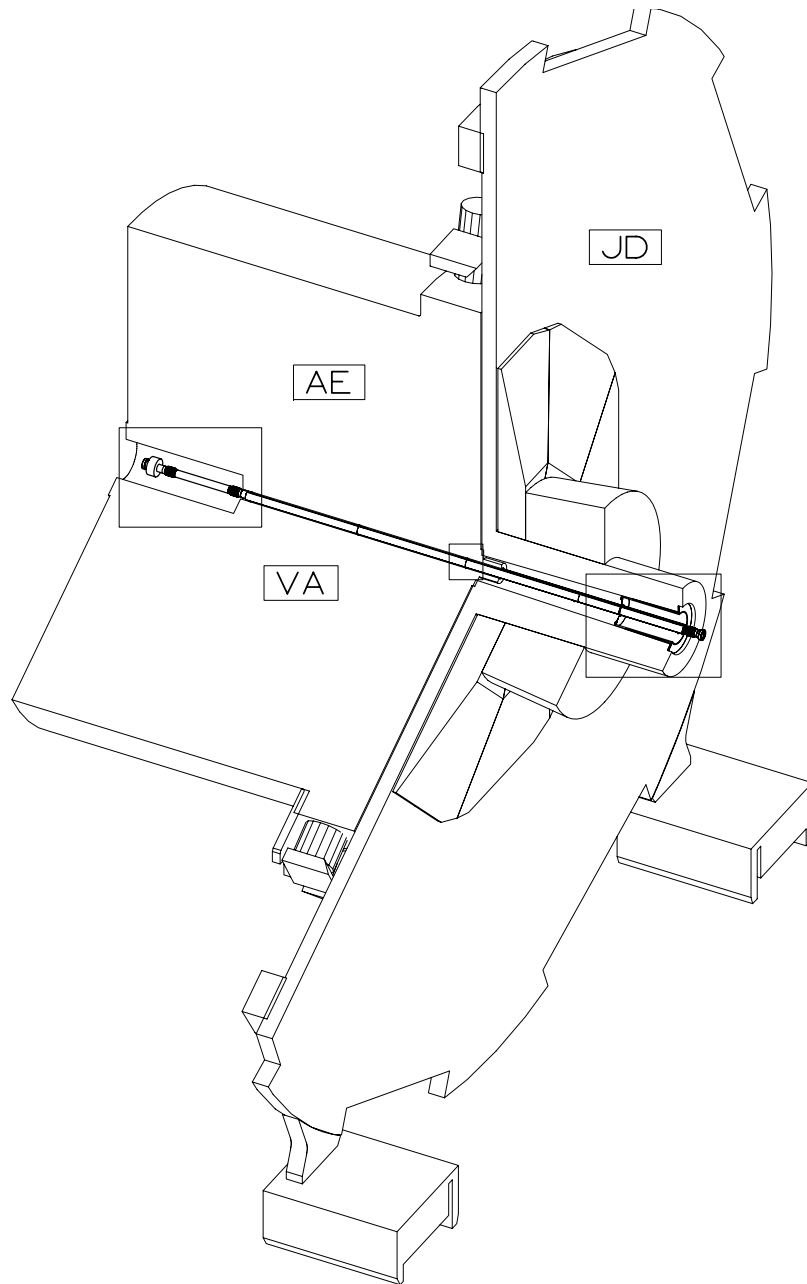




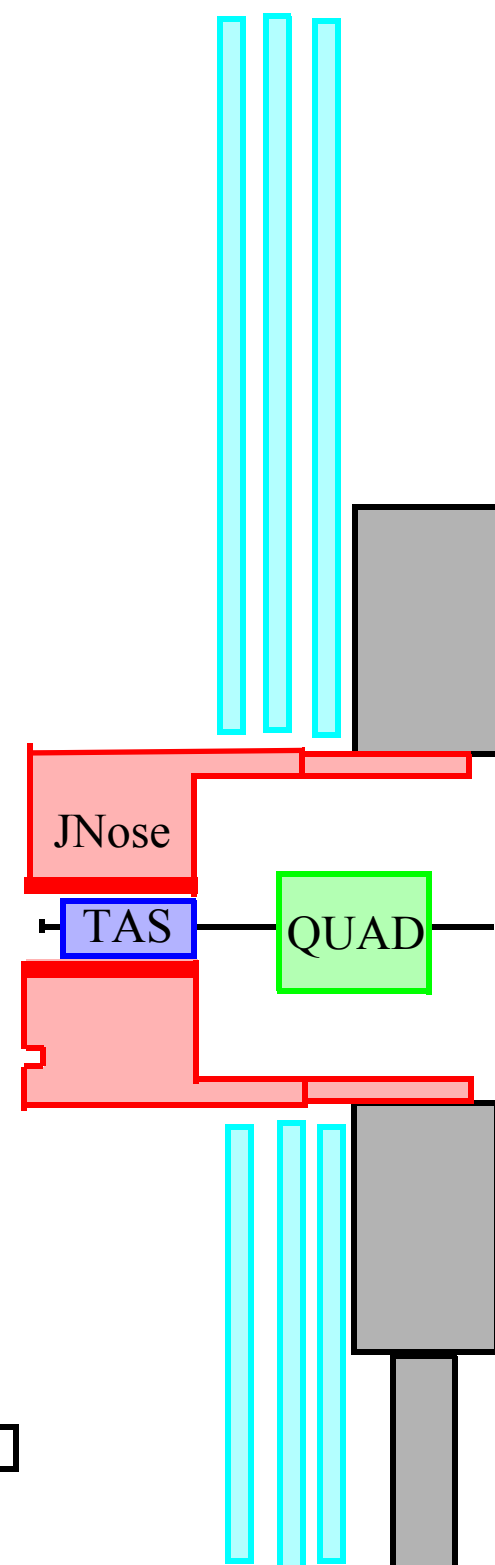
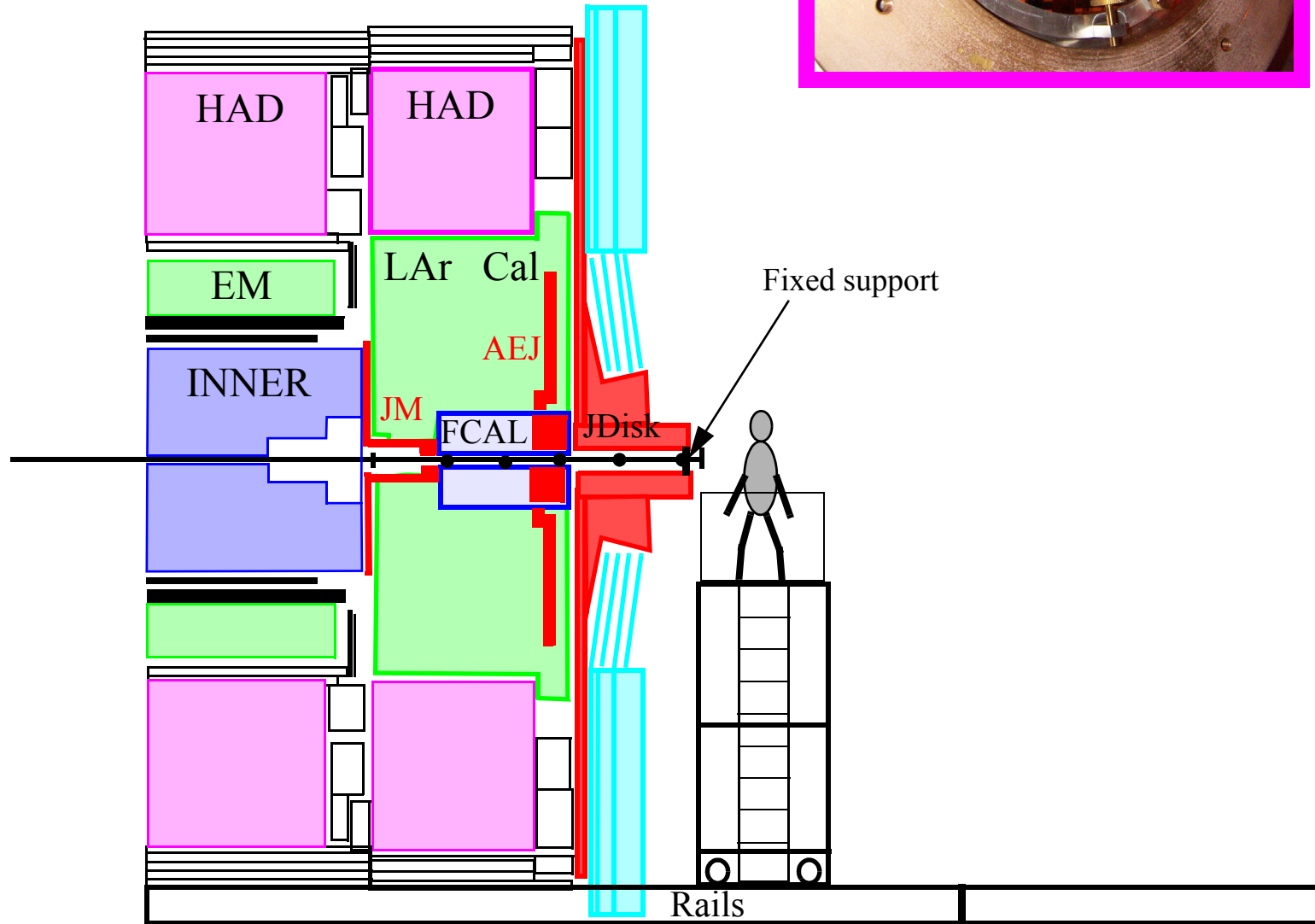
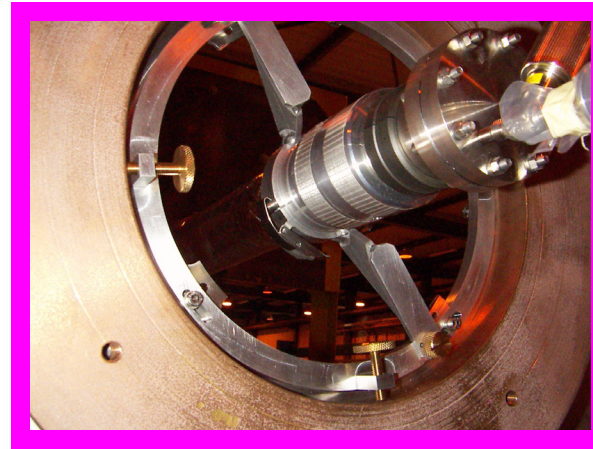


Beampipe supports

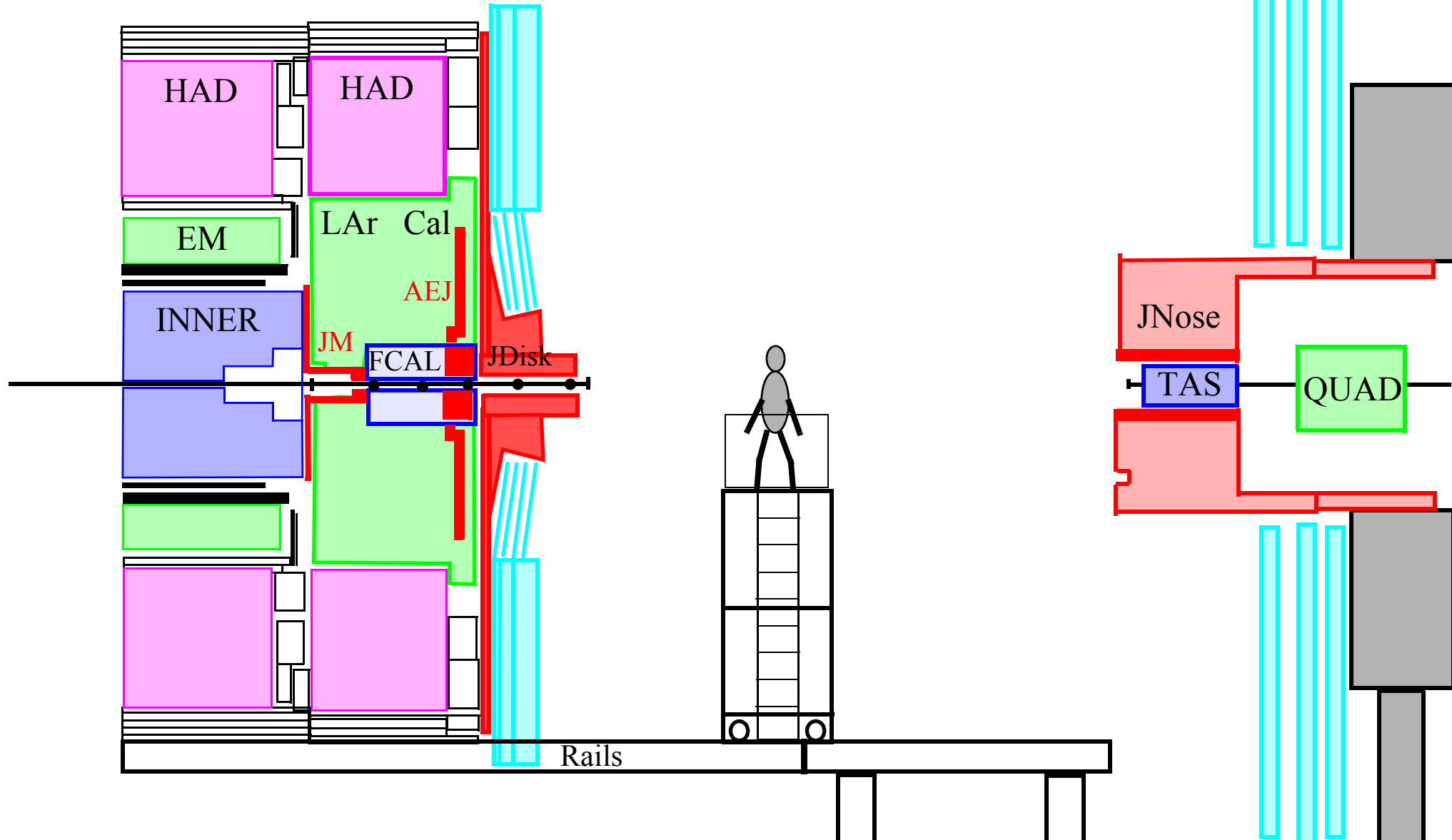
This support has to be attached.

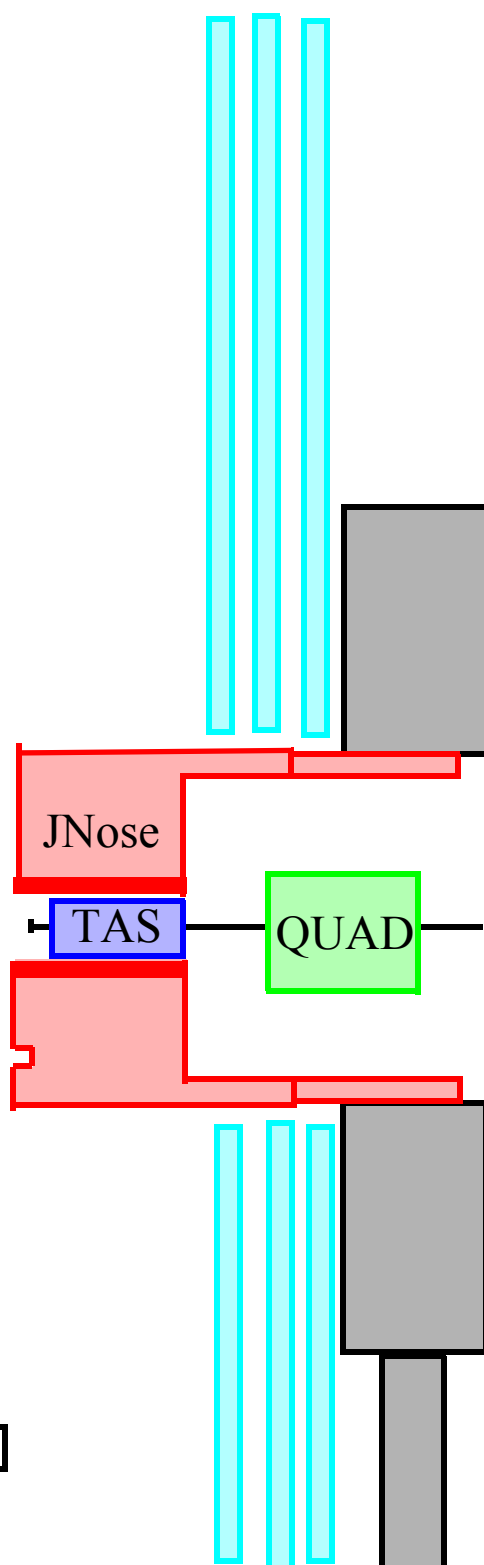
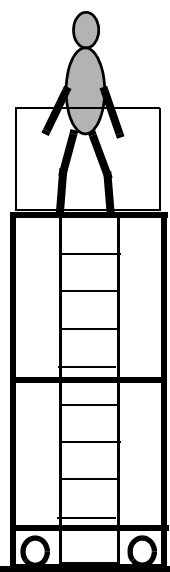
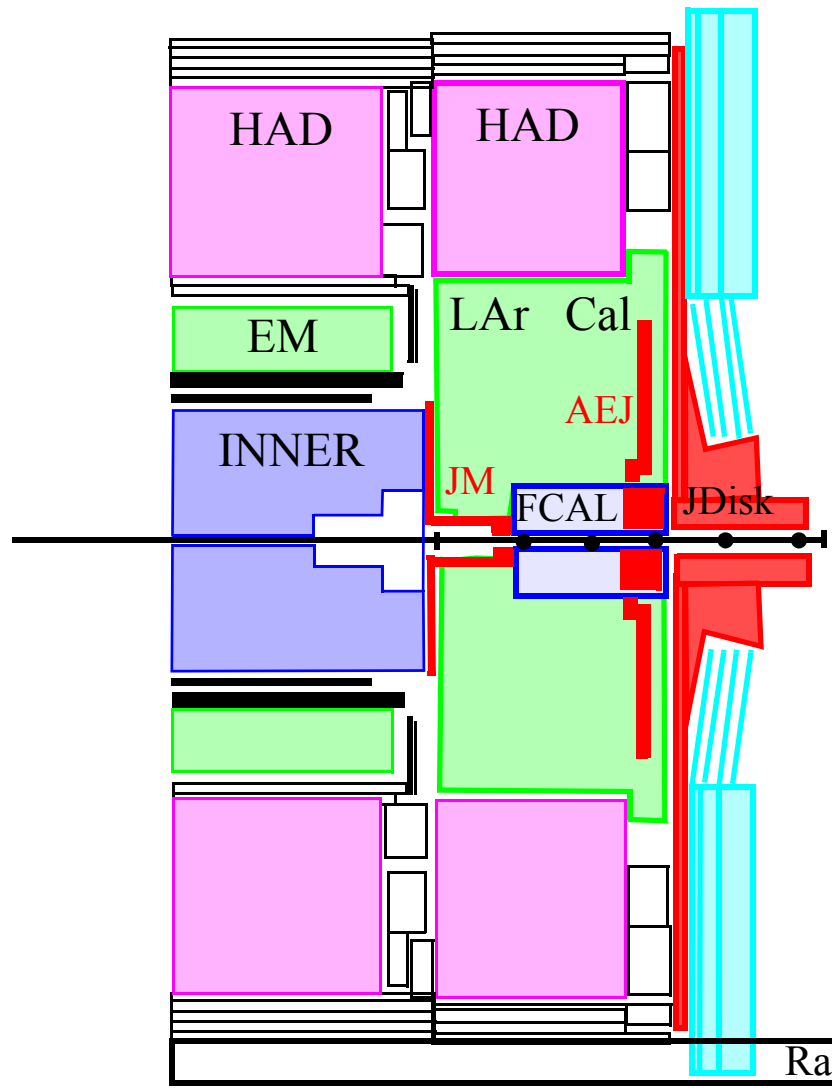


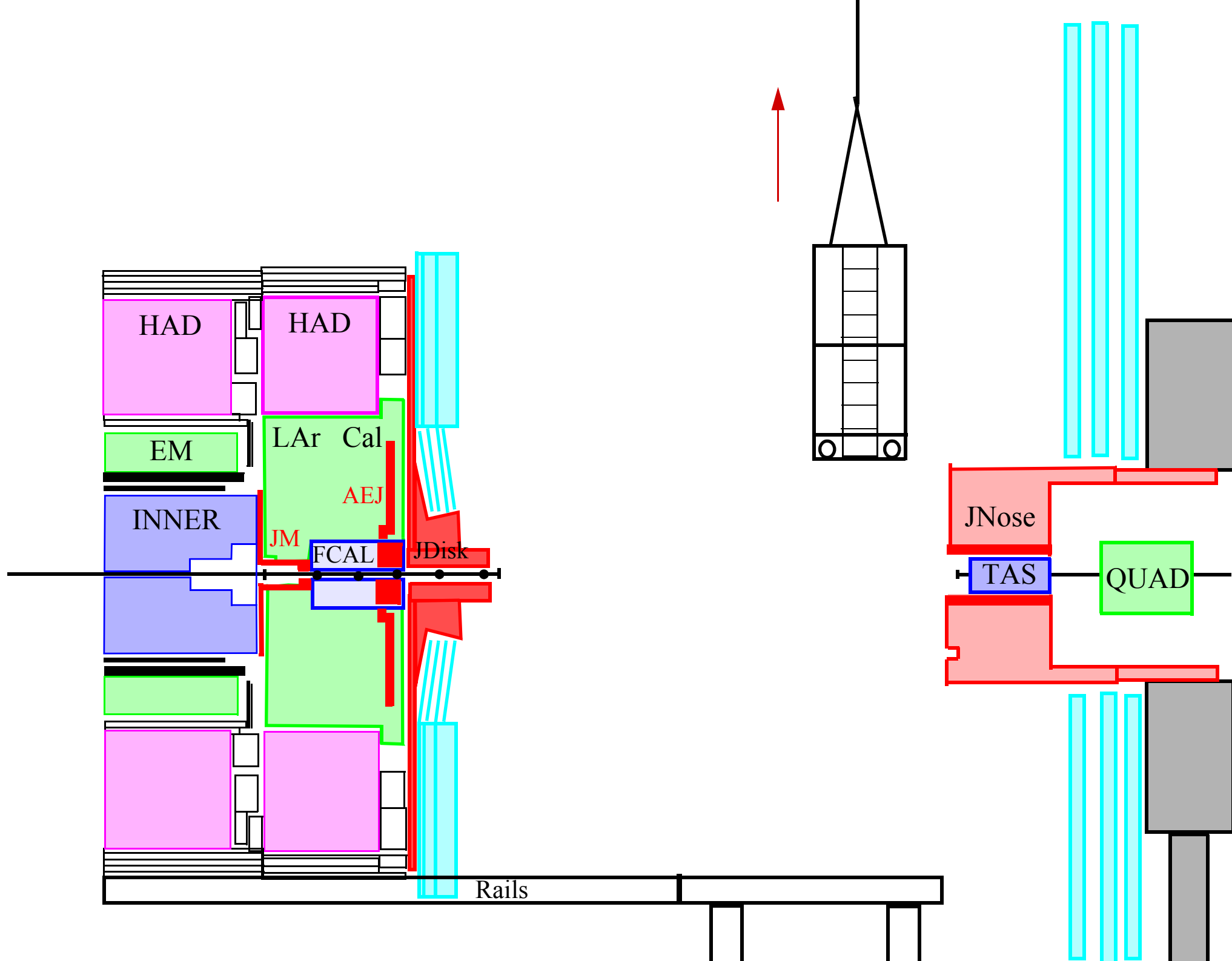
Install beampipe supports



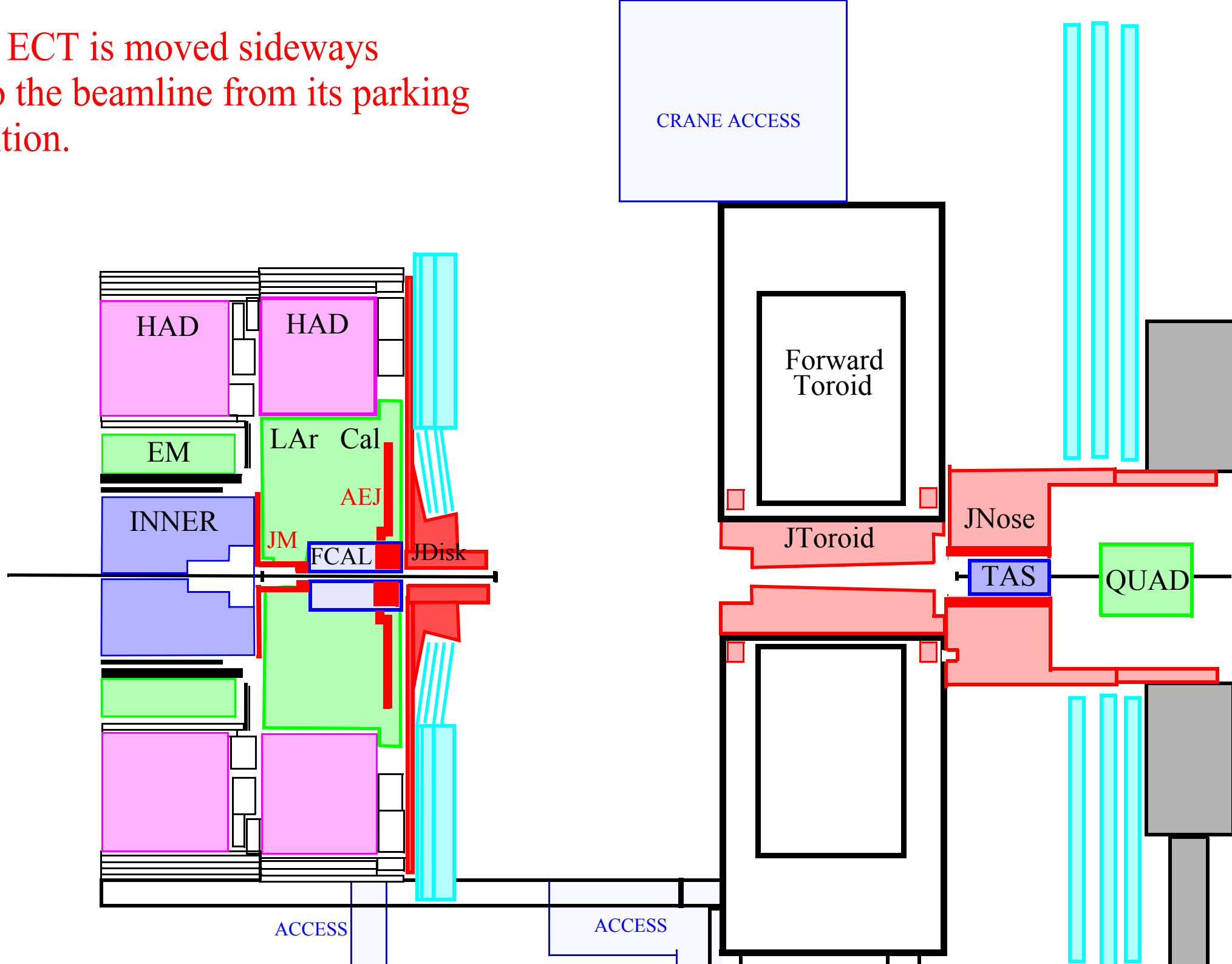
Remove minivan.



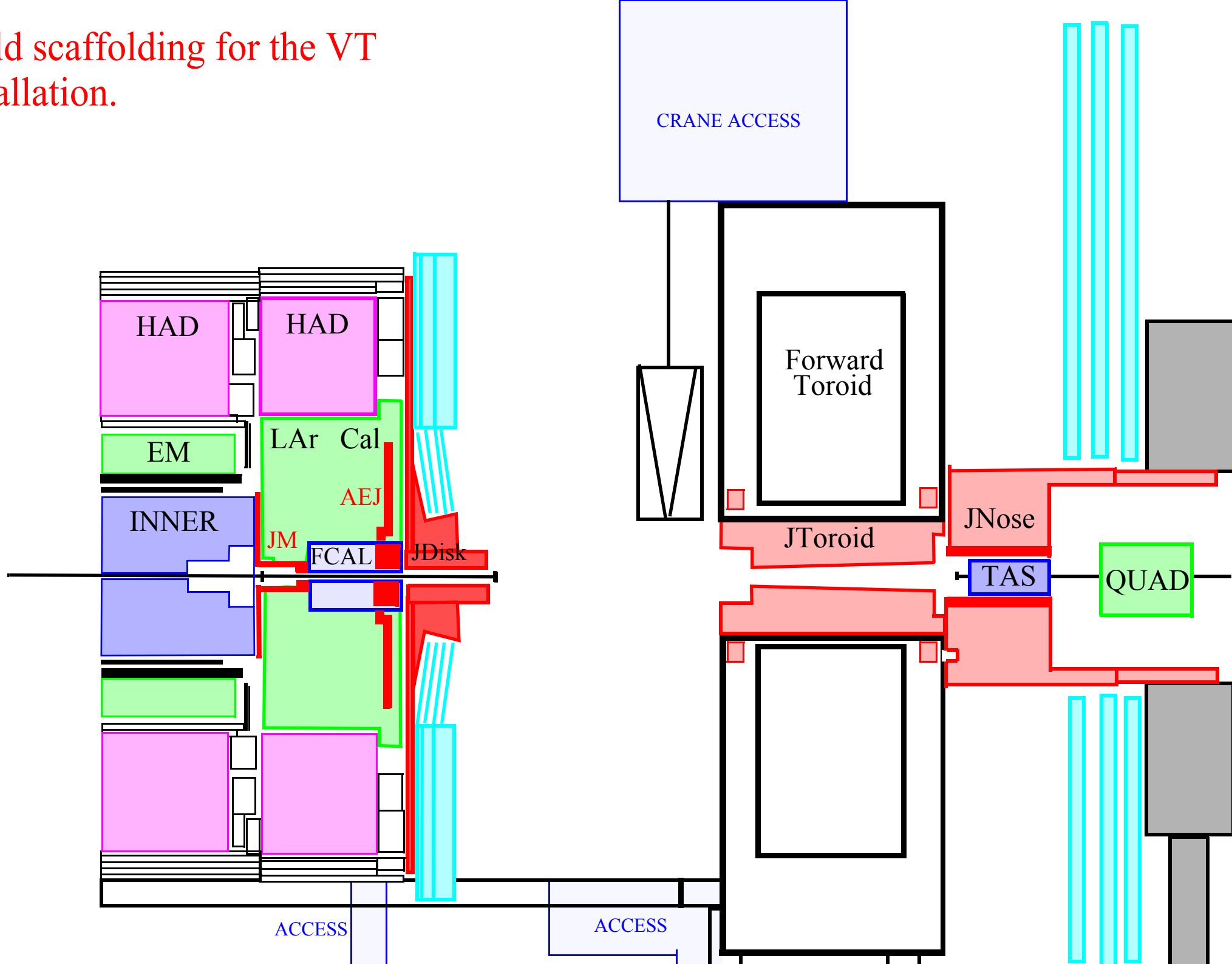


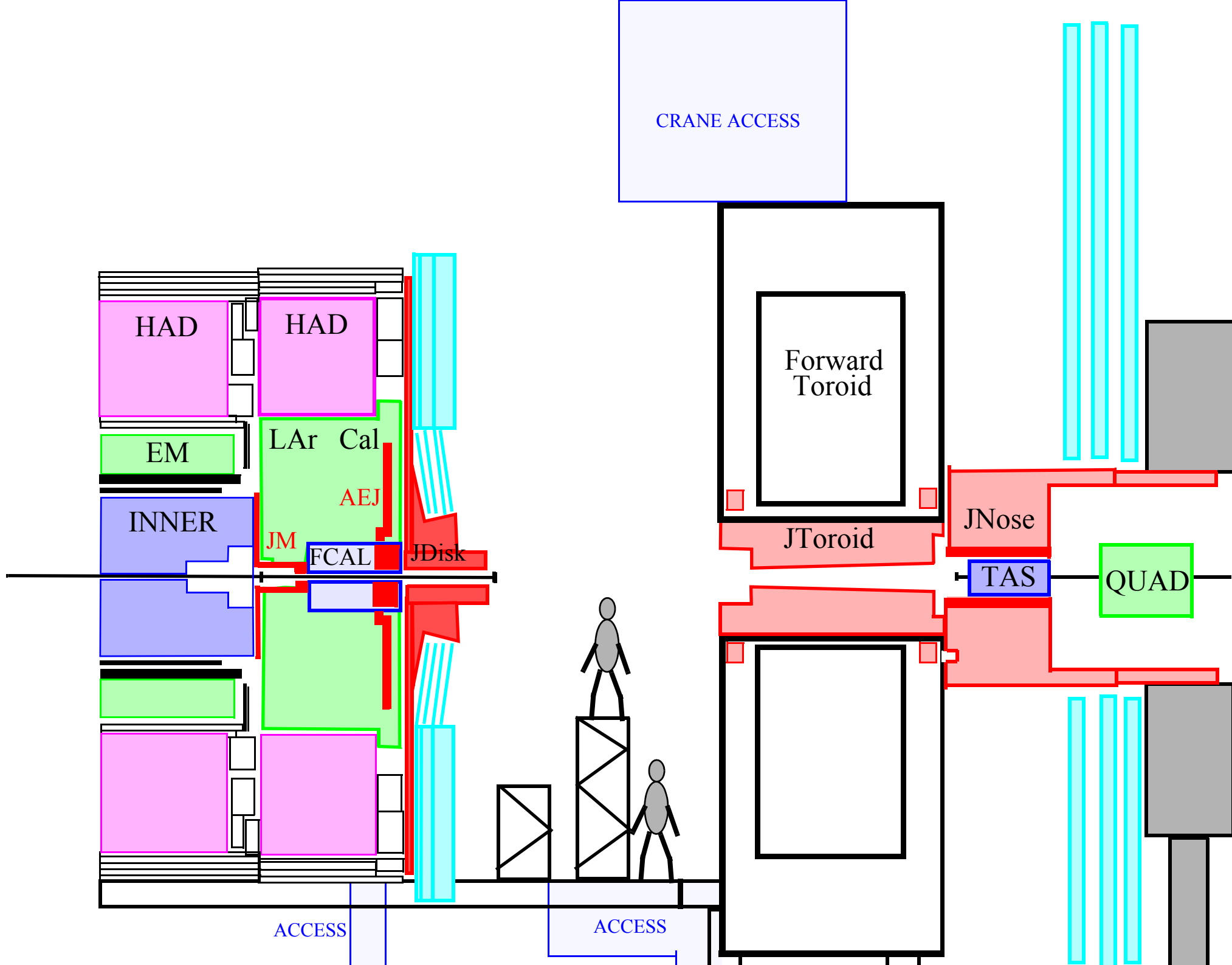


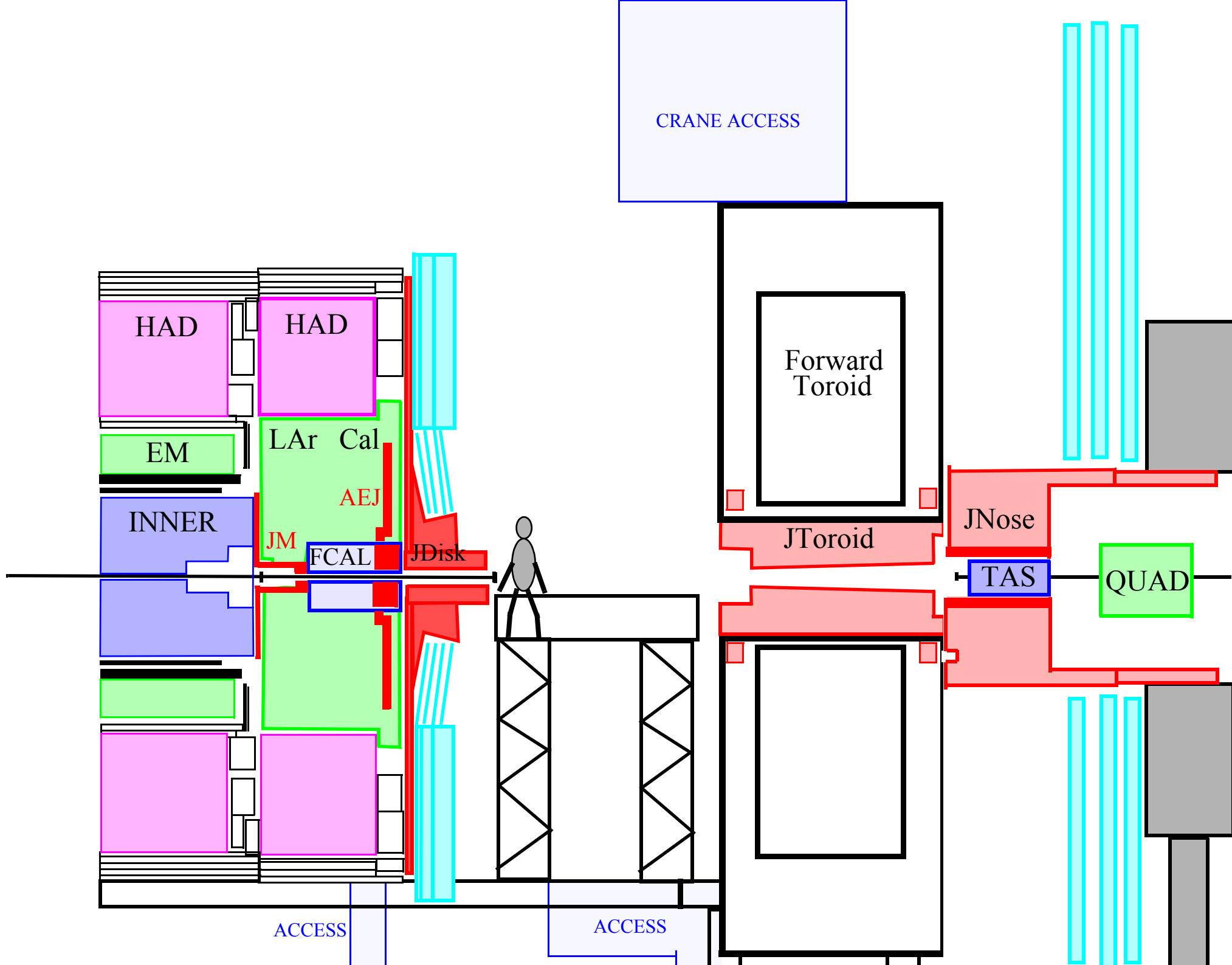
The ECT is moved sideways onto the beamline from its parking position.

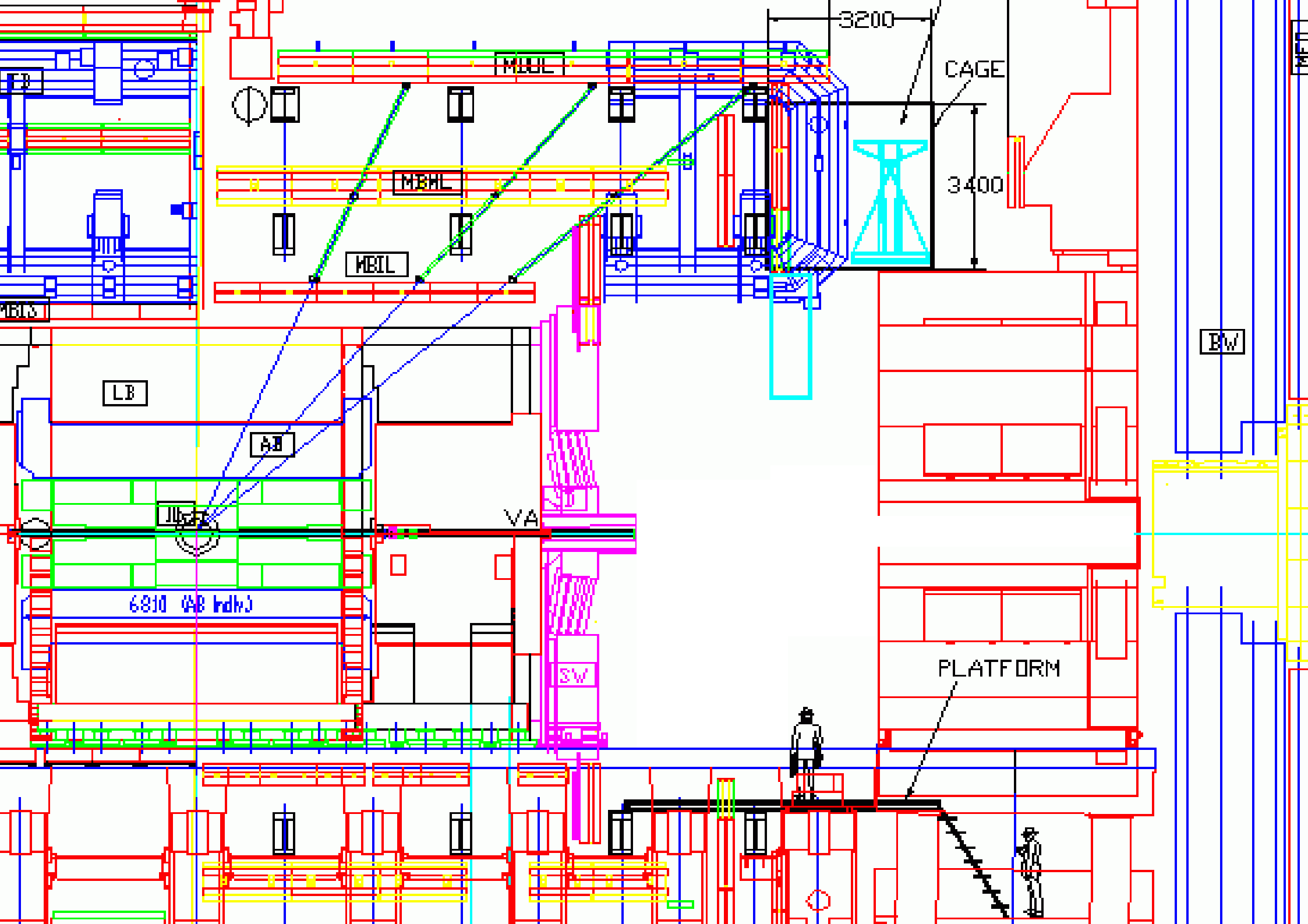


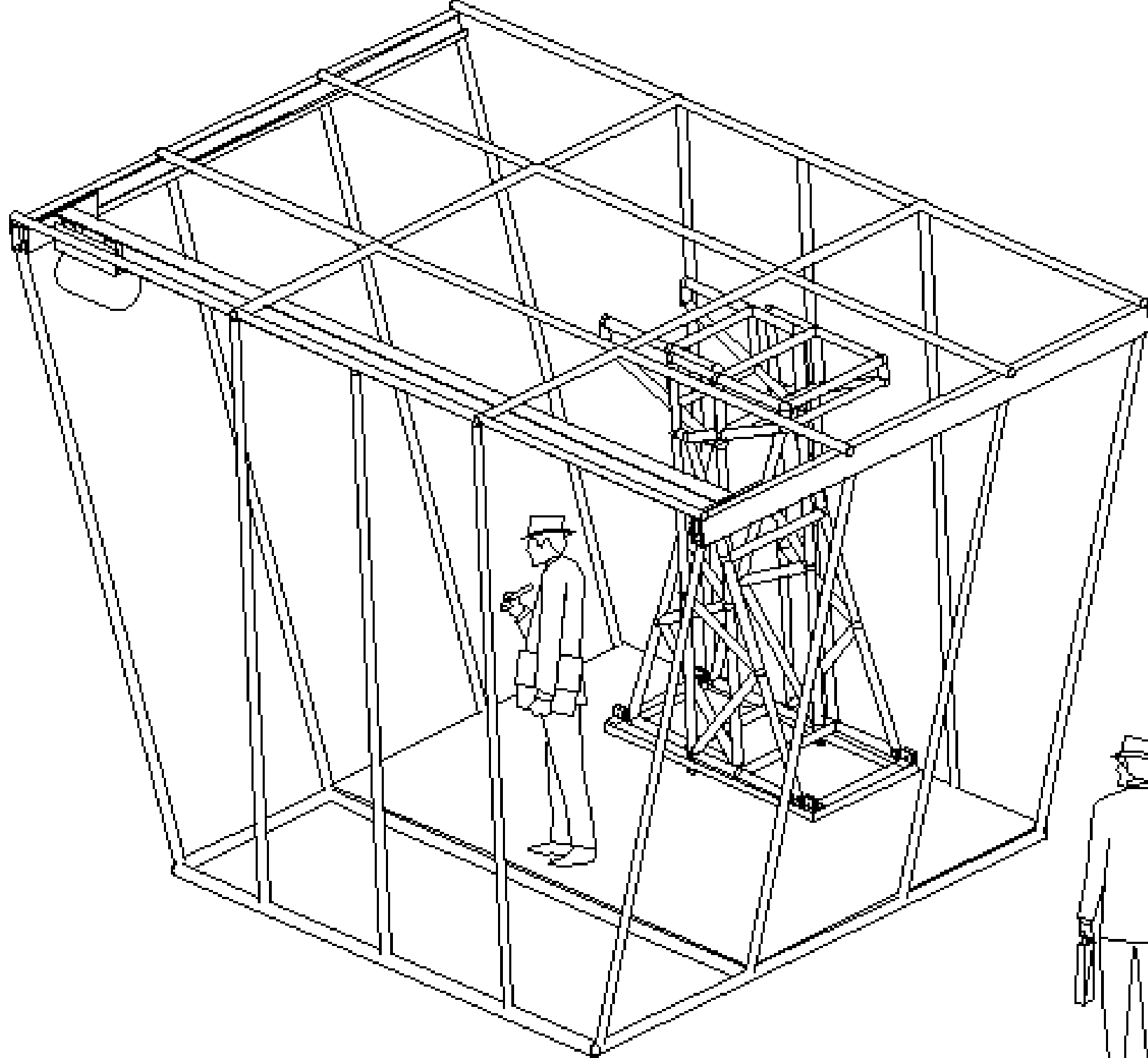
Build scaffolding for the VT installation.

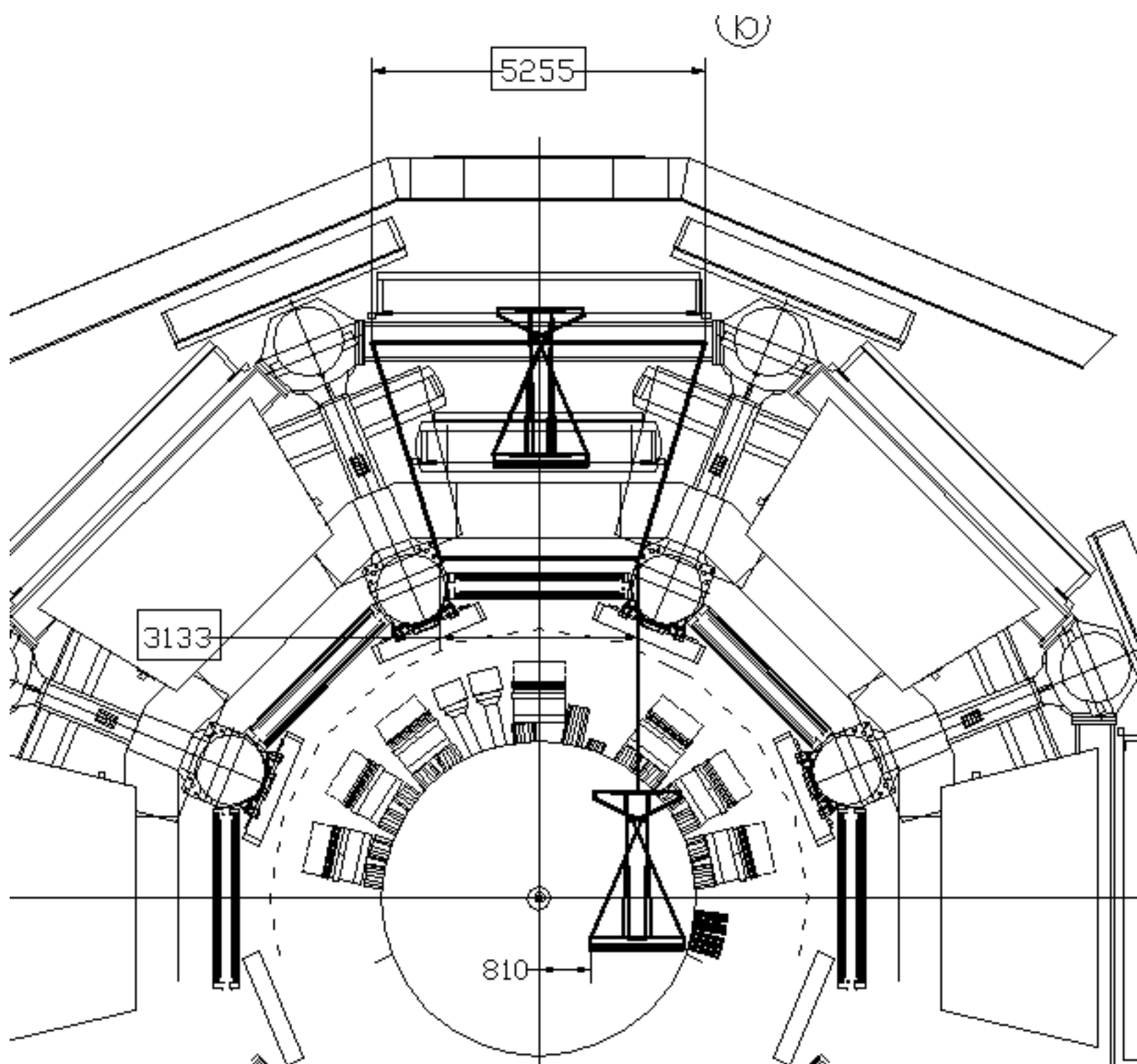


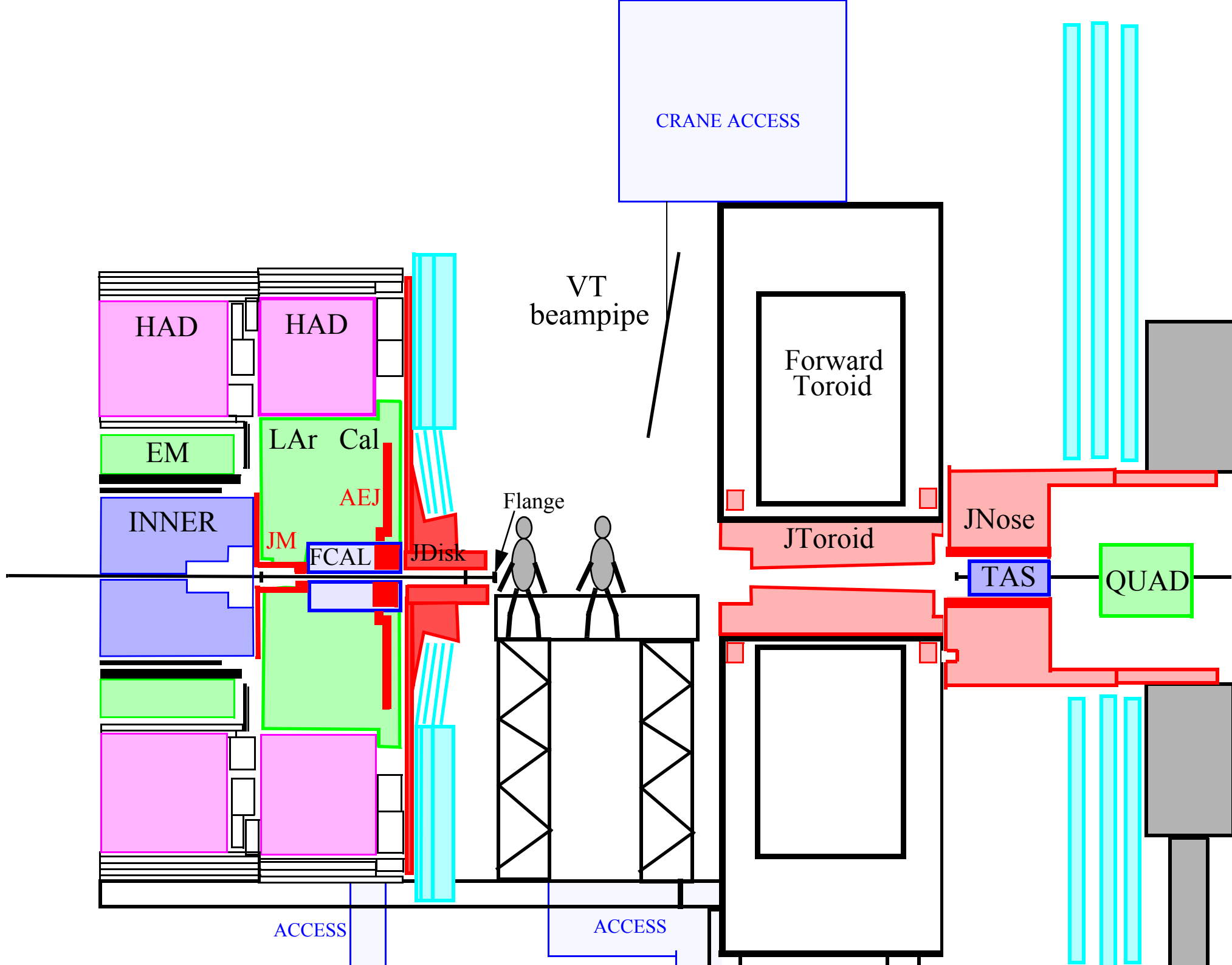


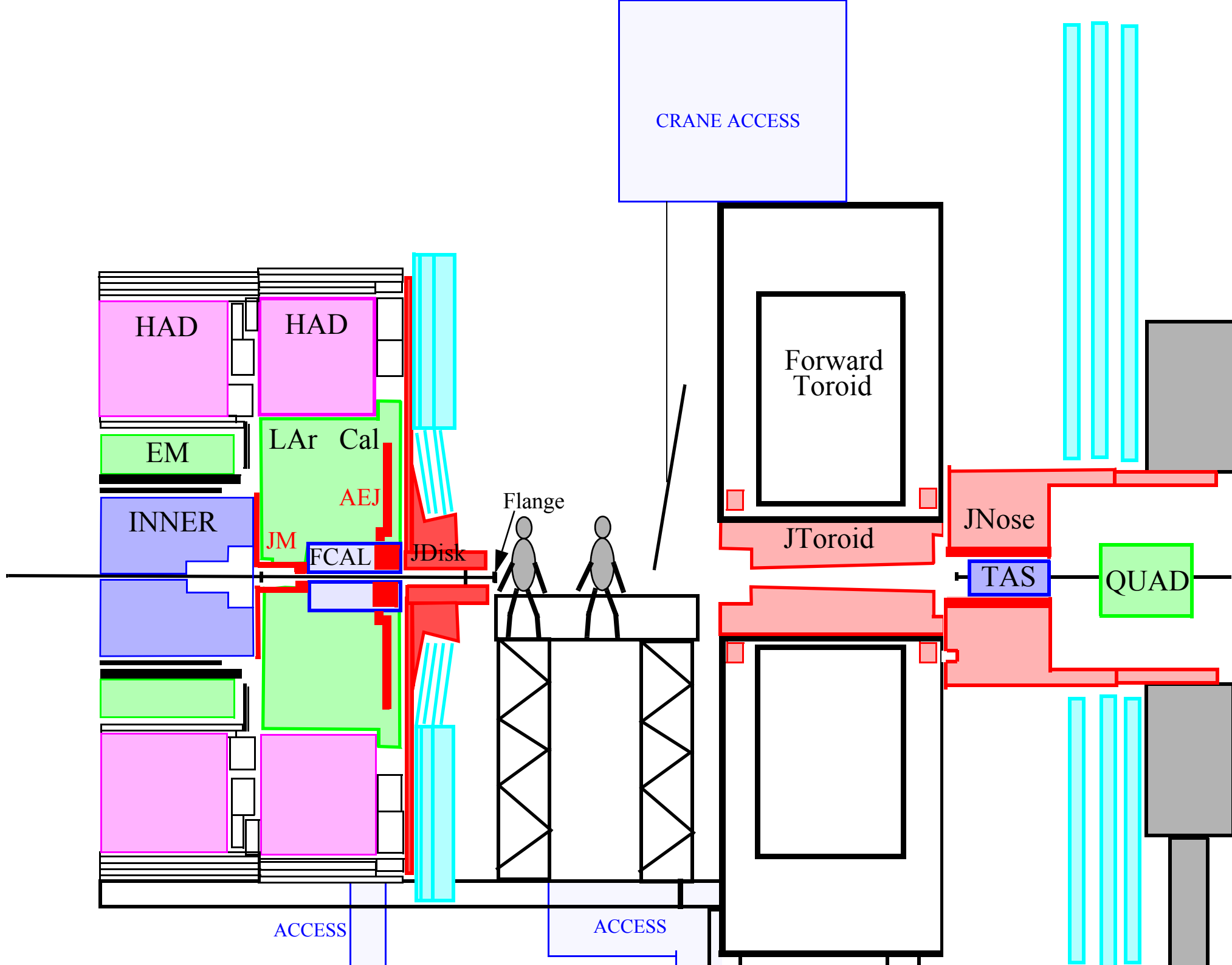


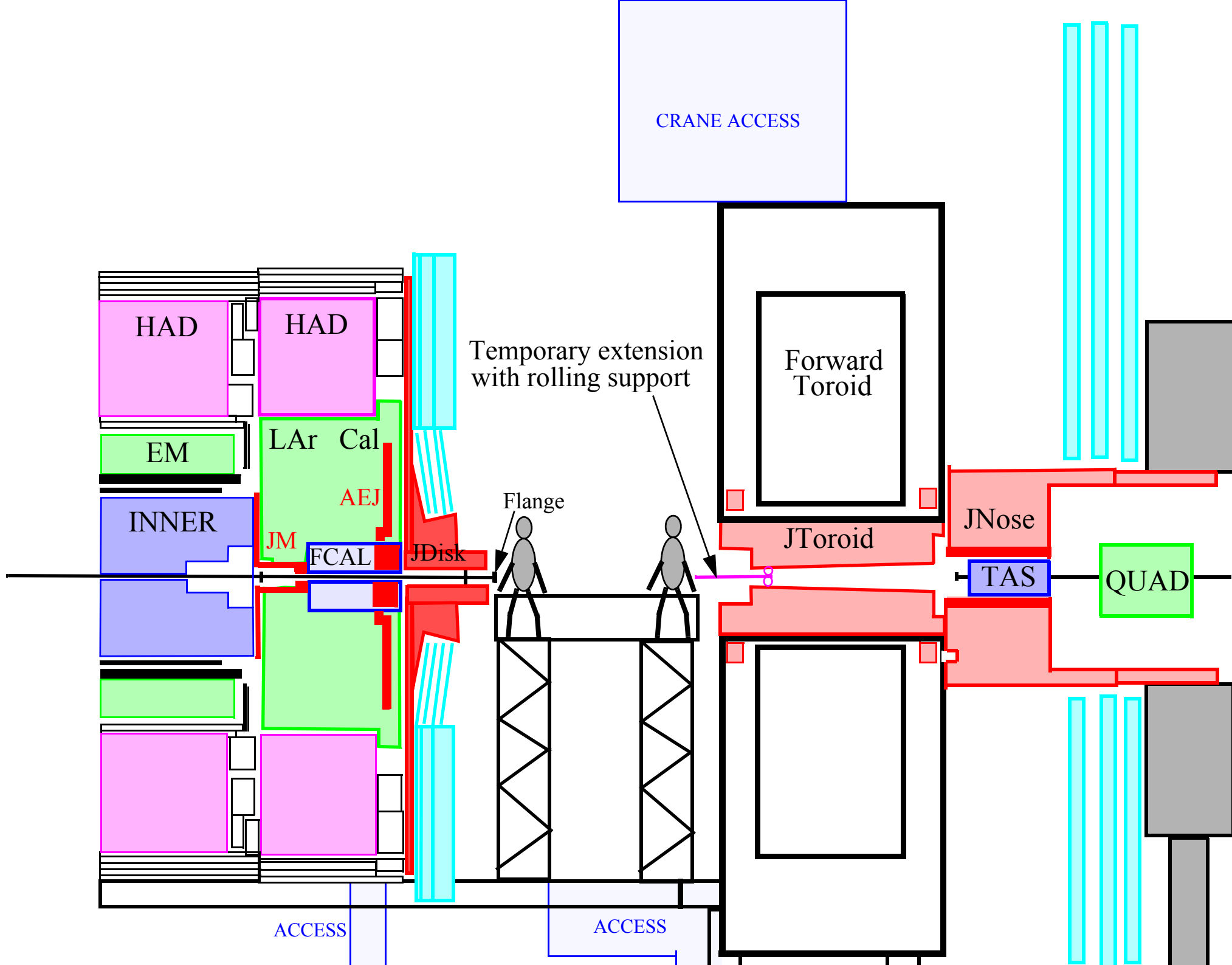


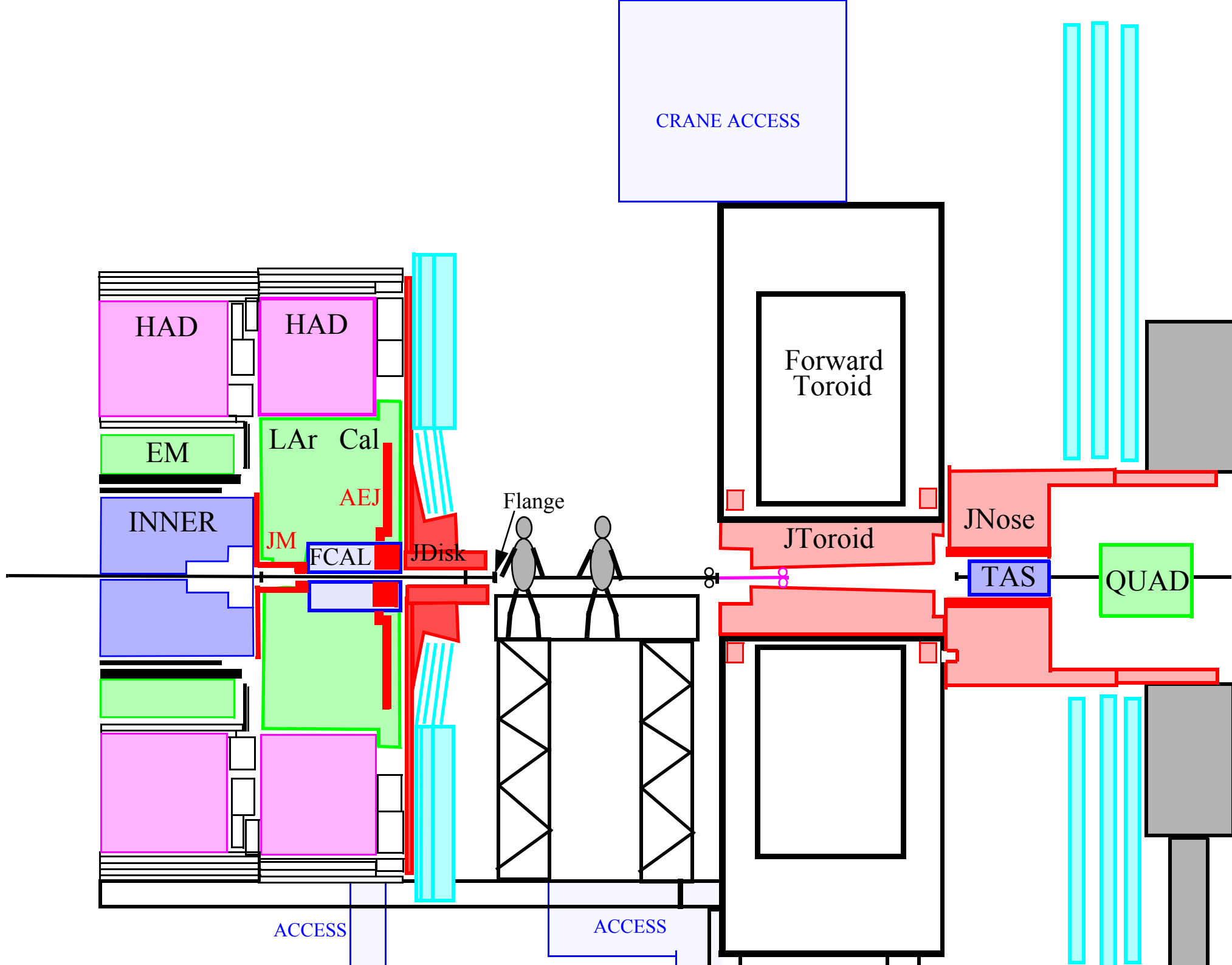


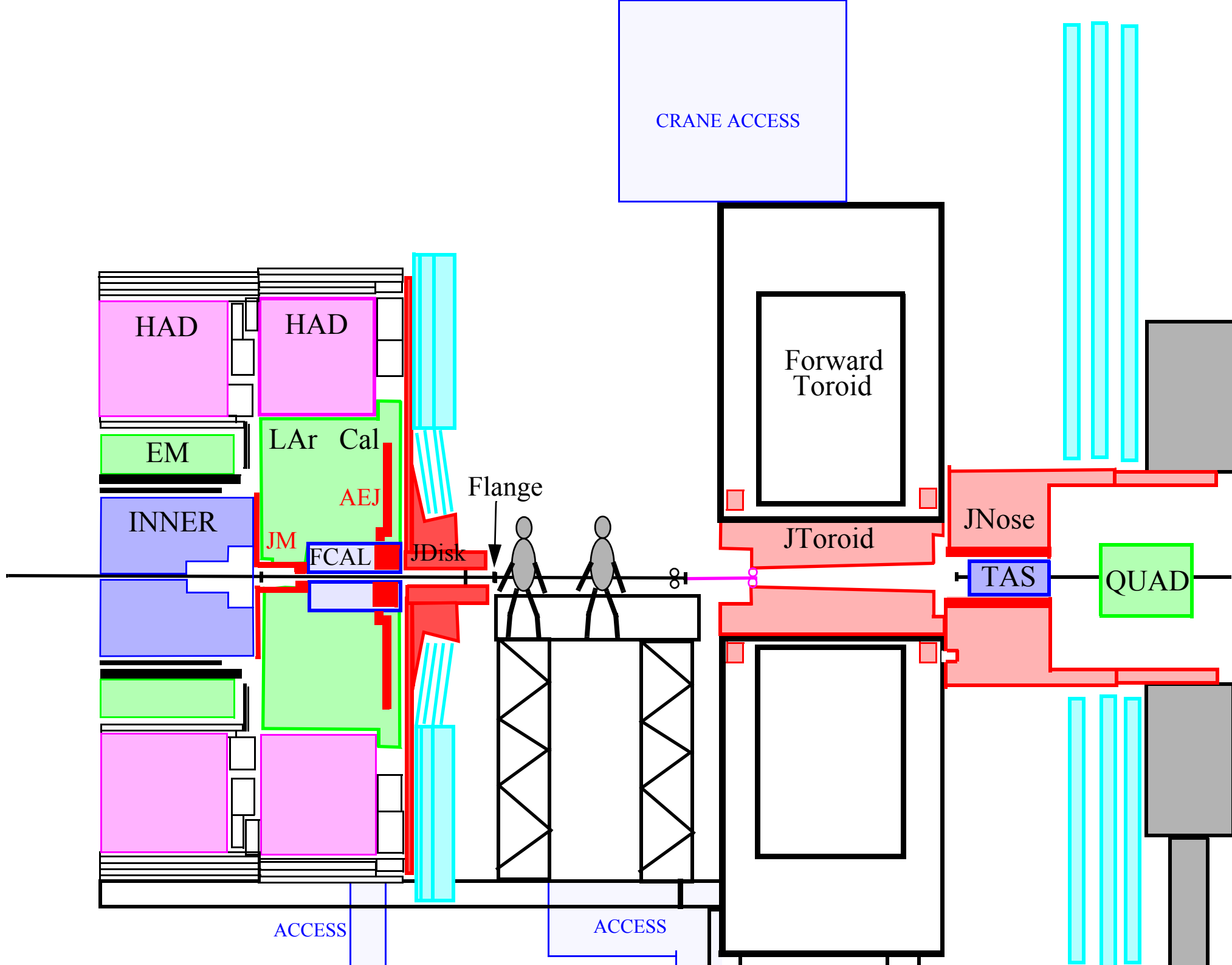


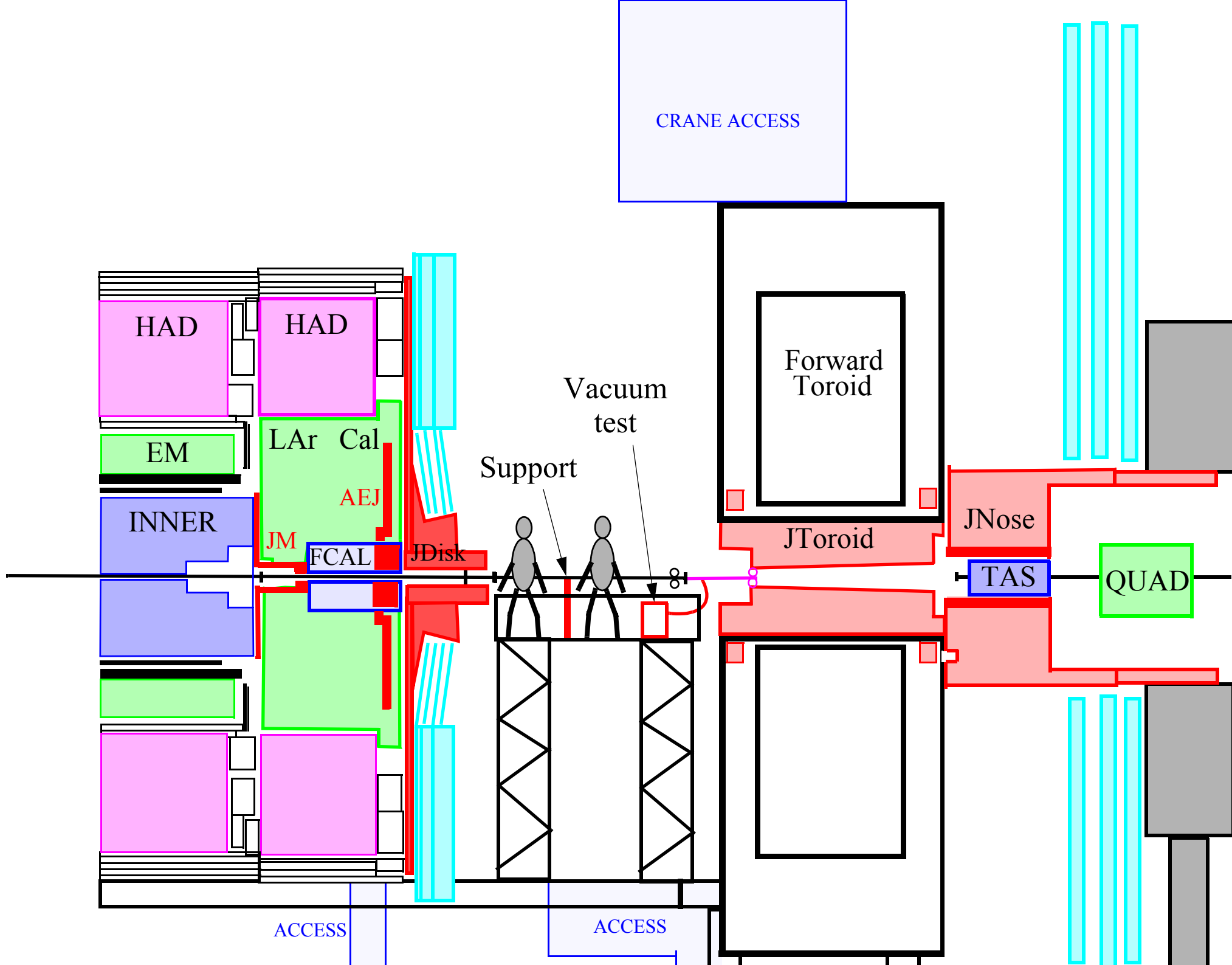


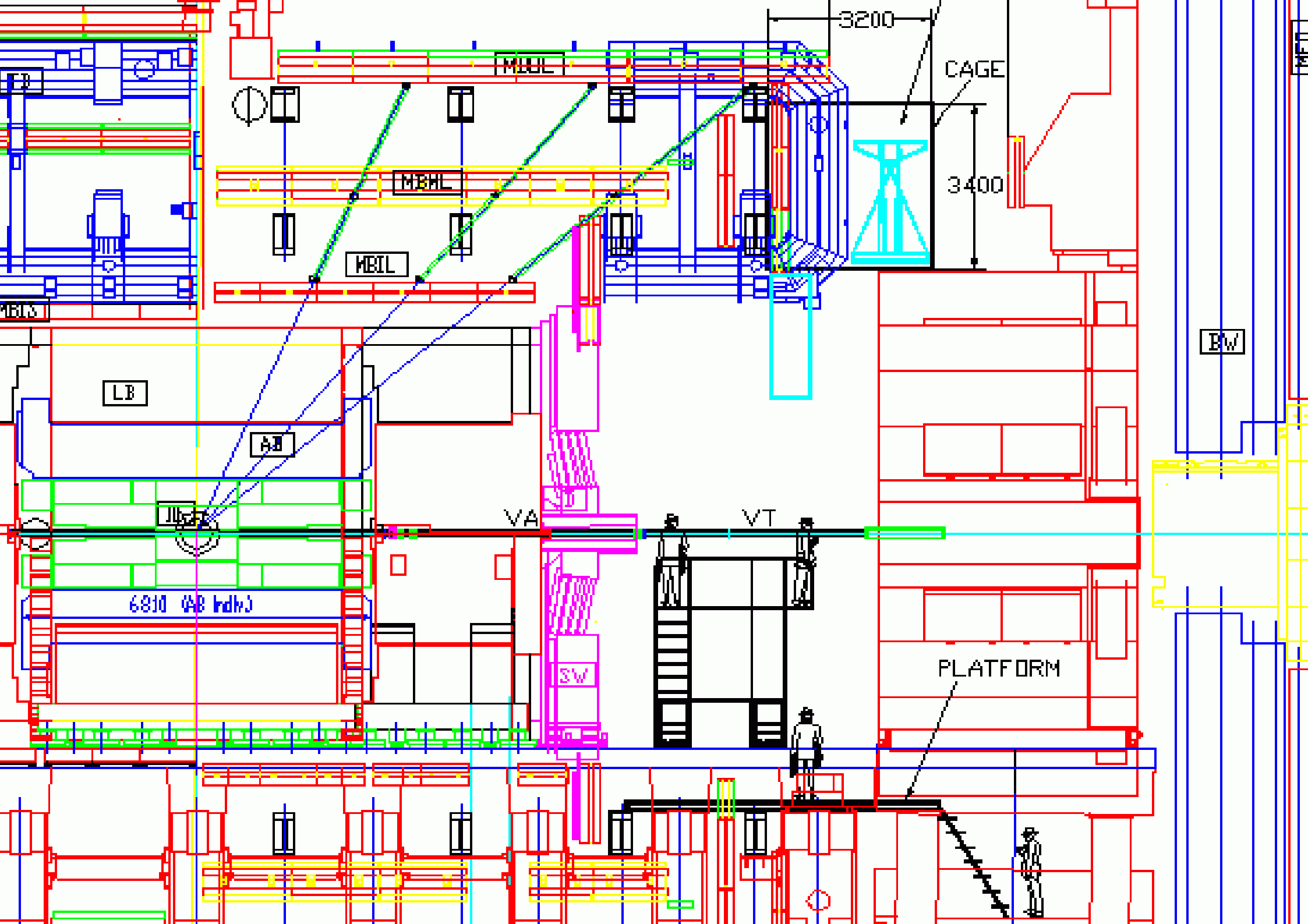




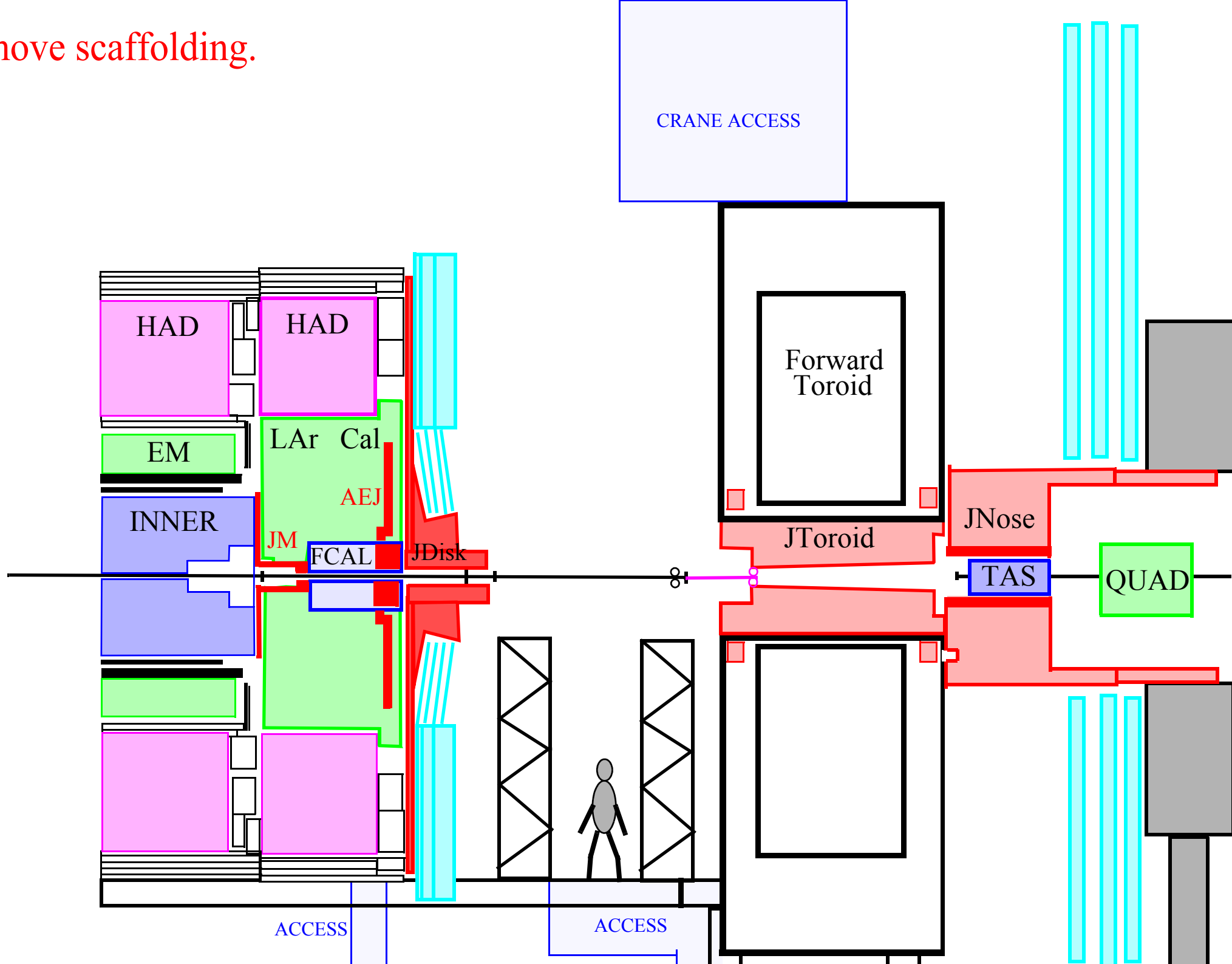


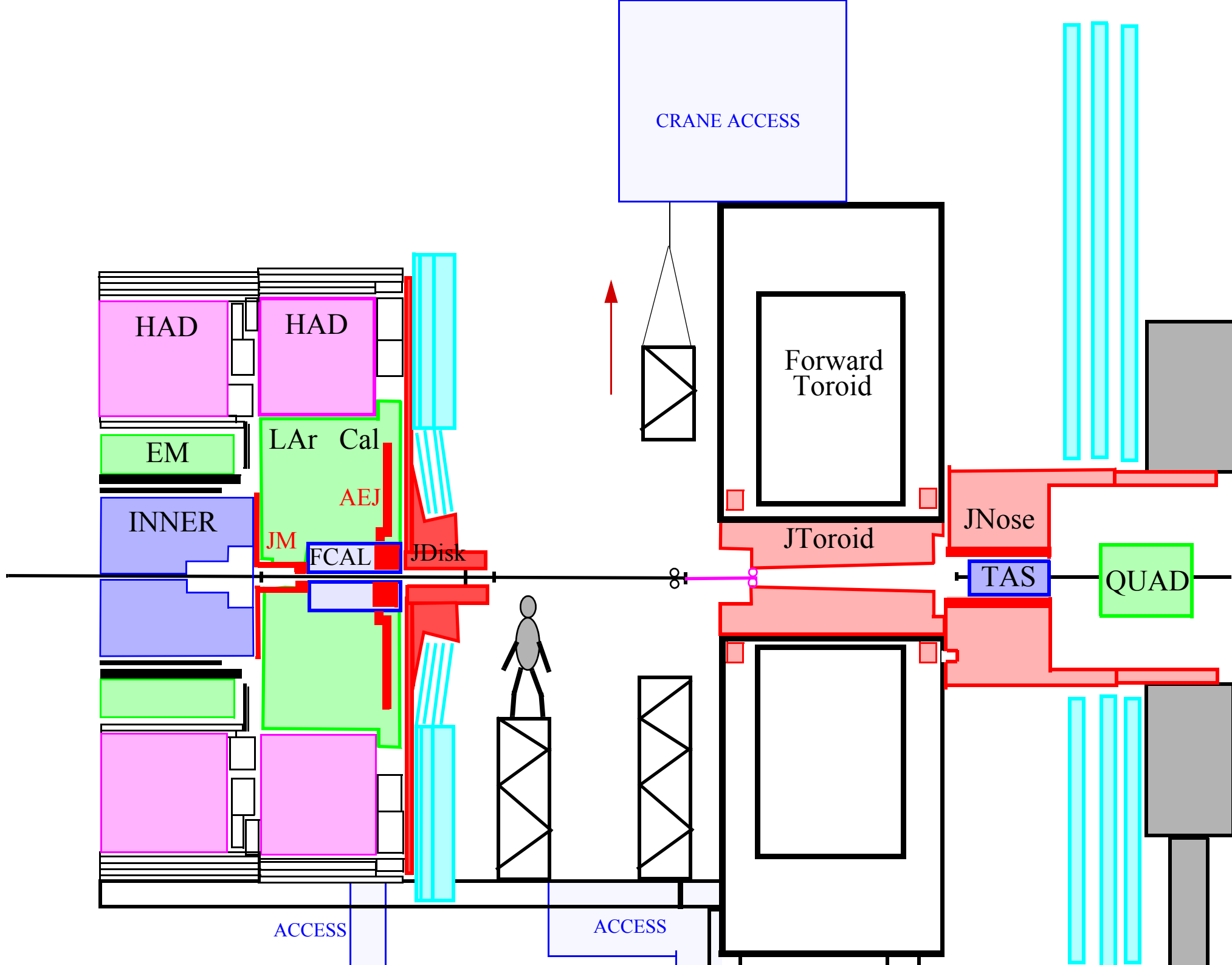


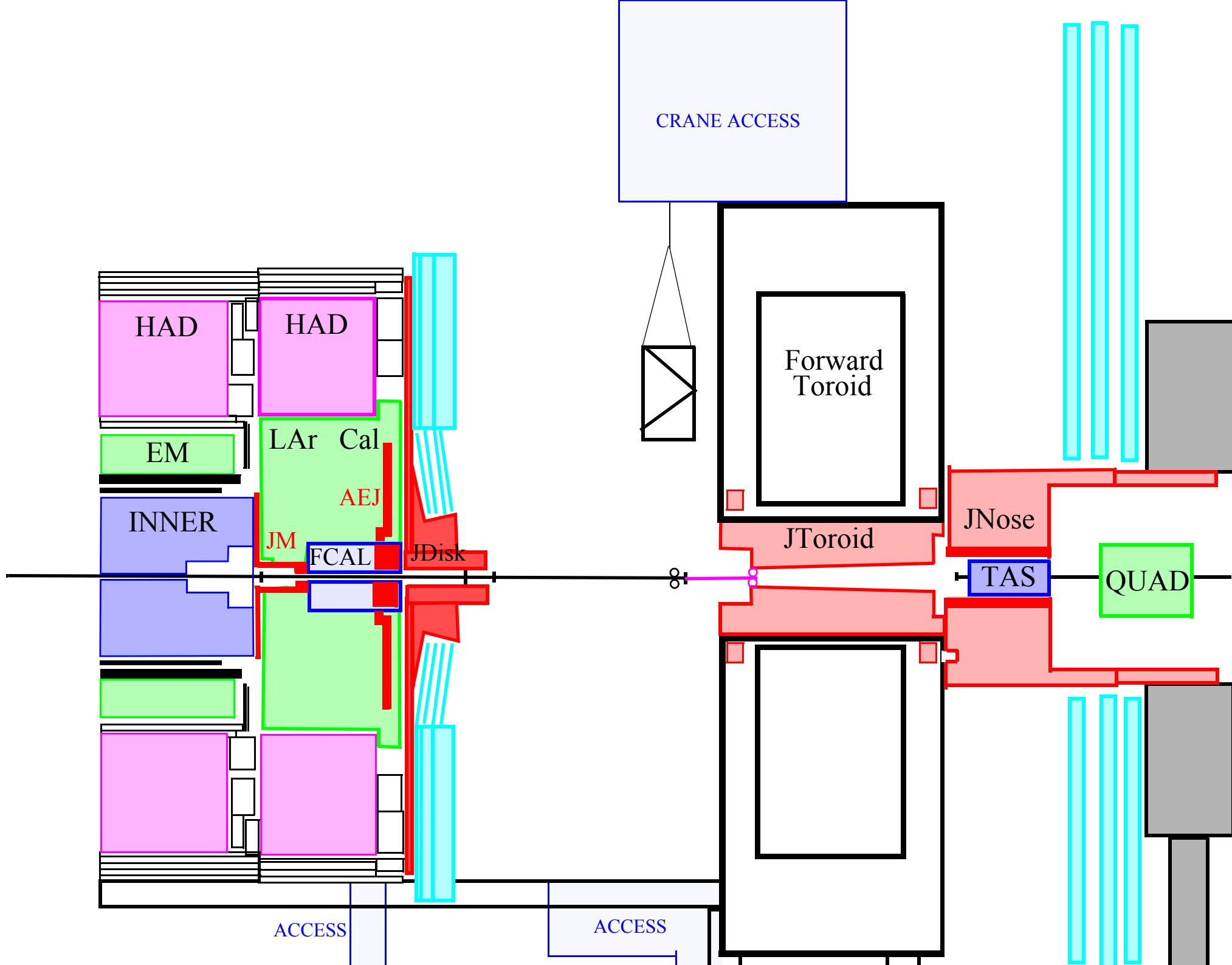




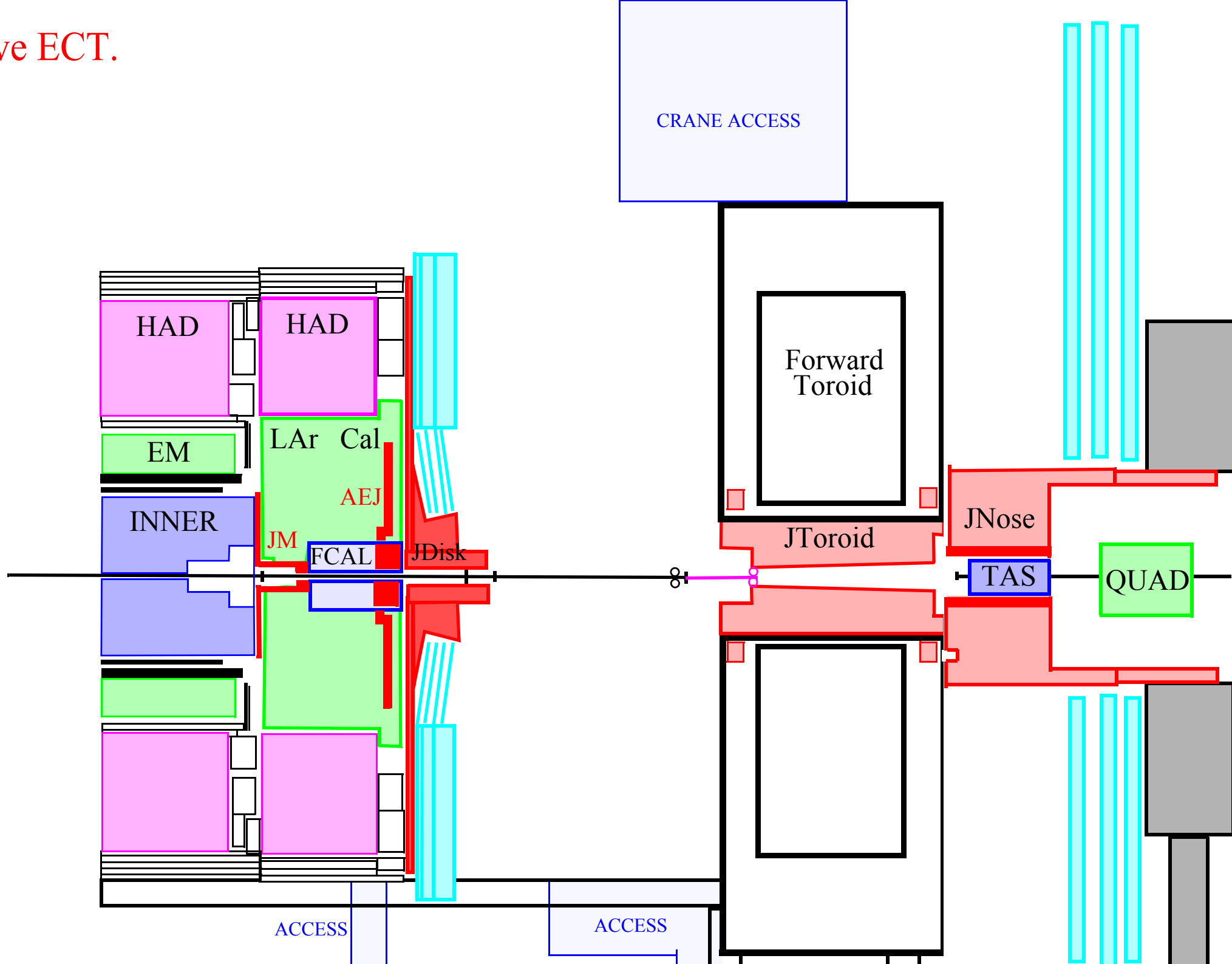
Remove scaffolding.

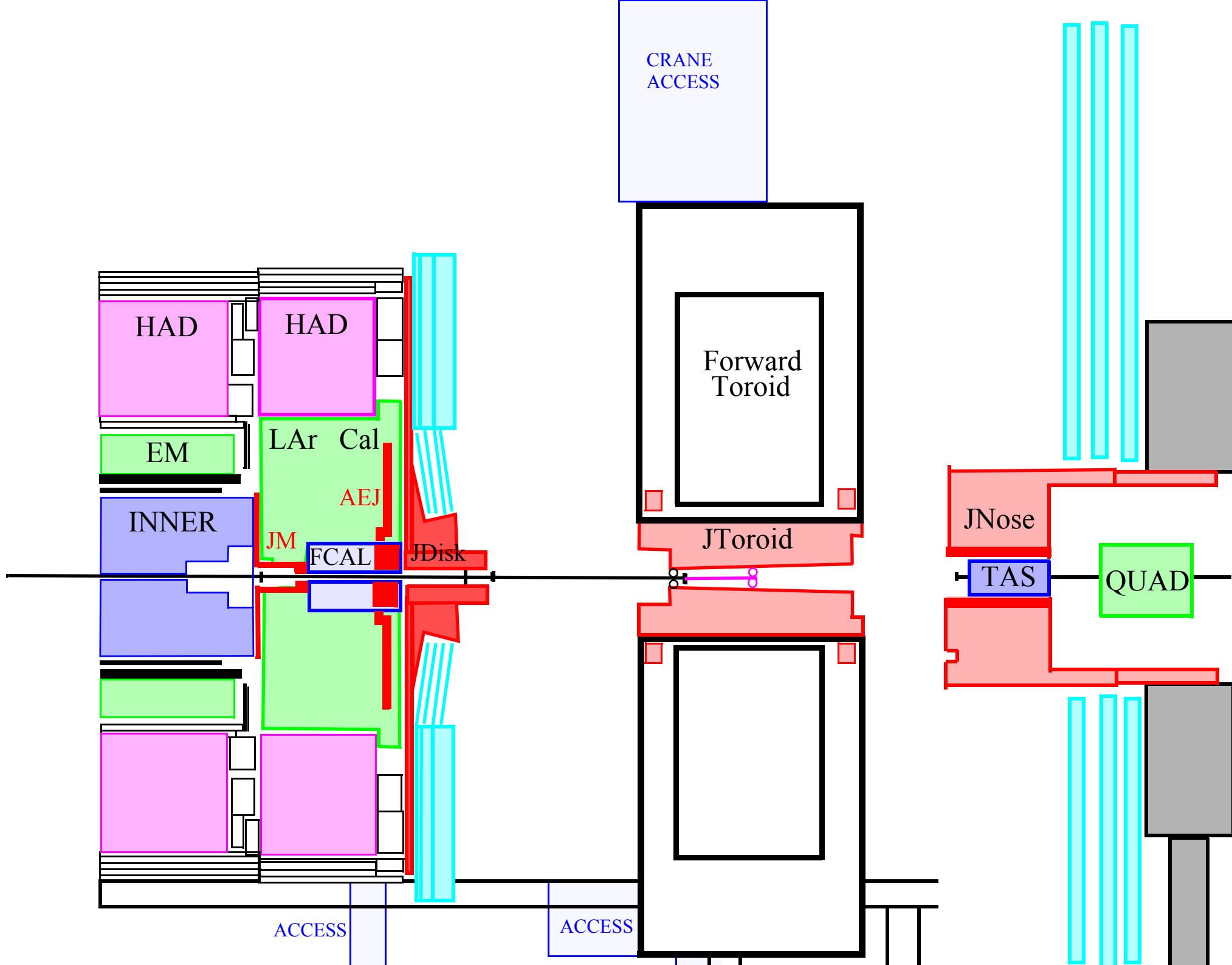


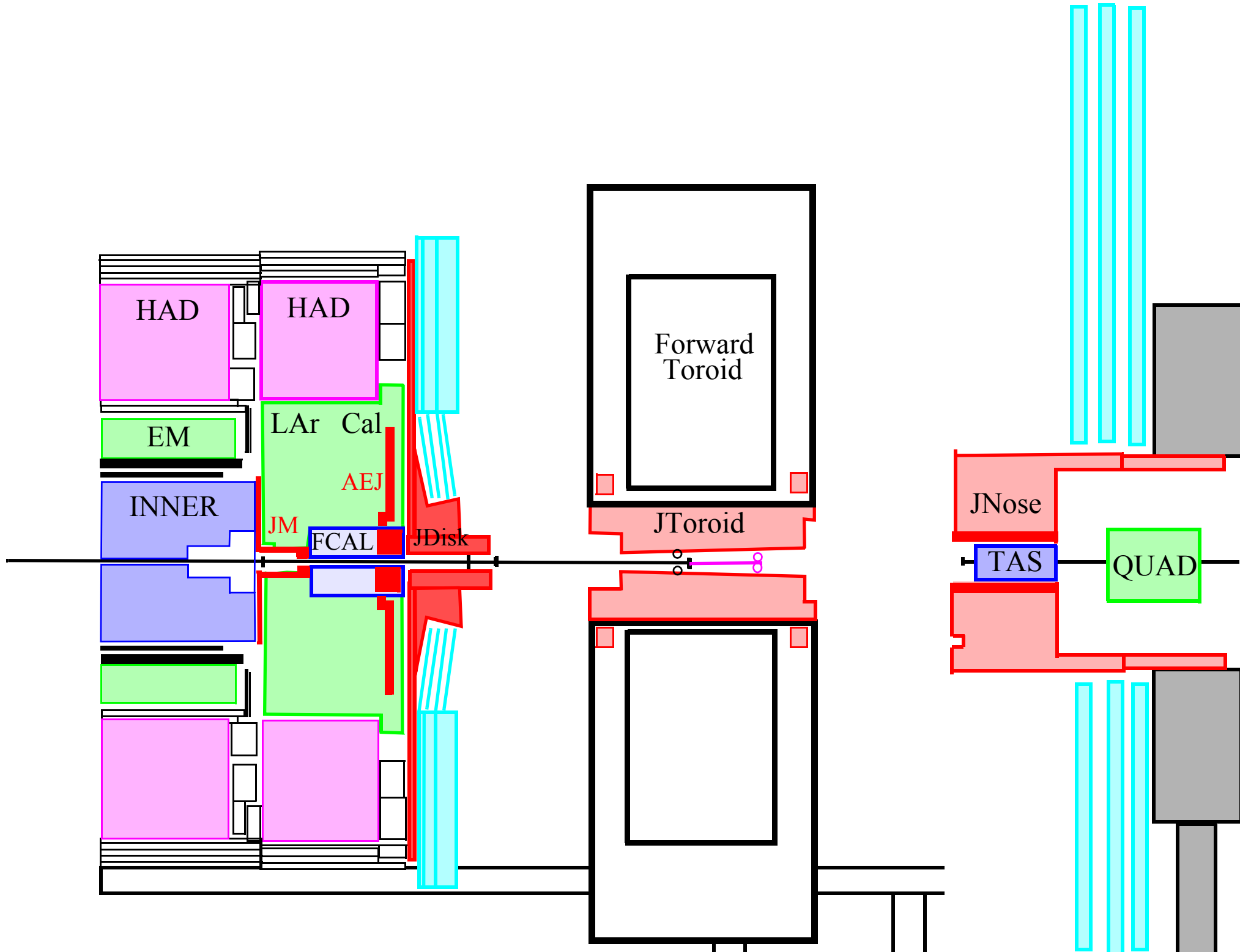


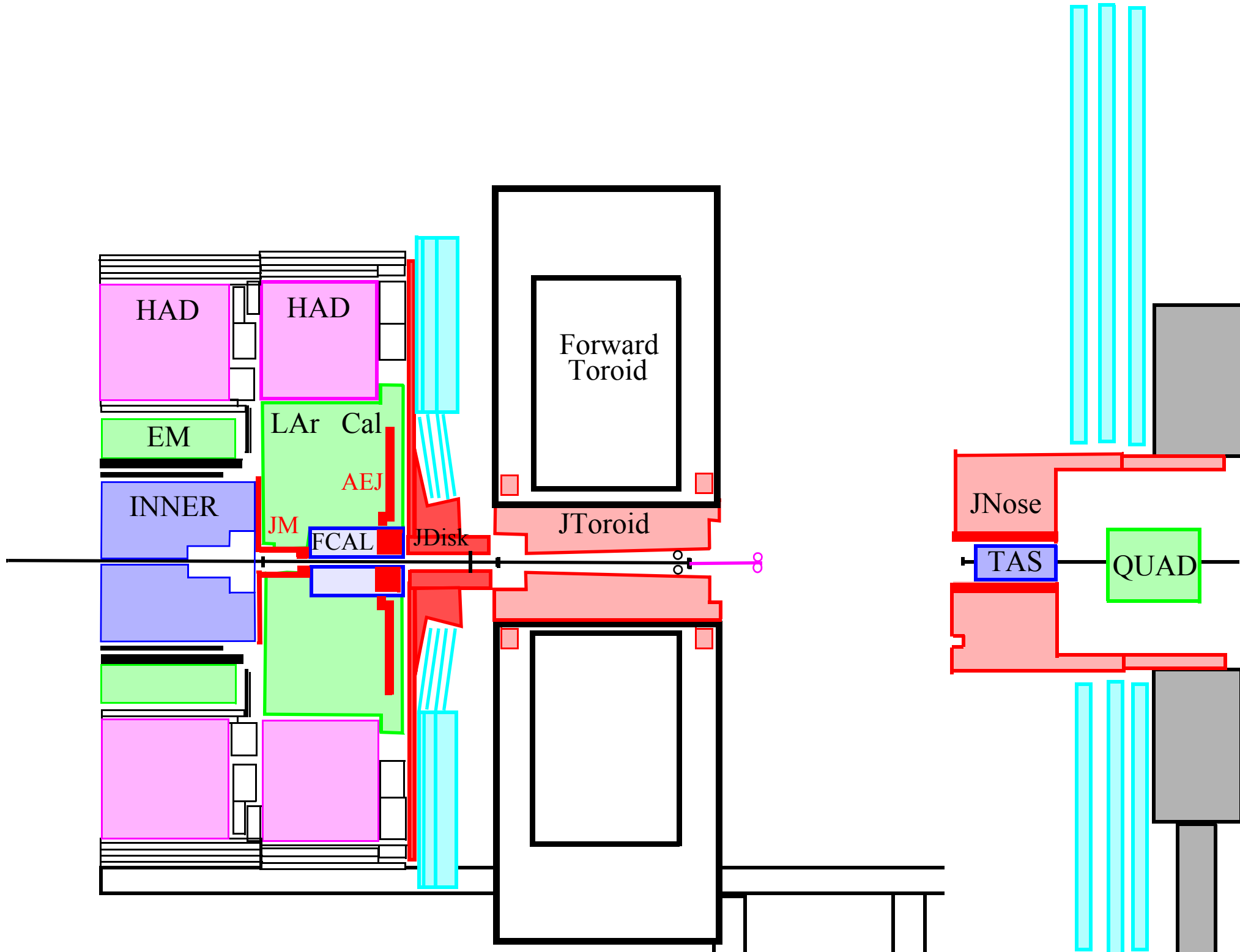


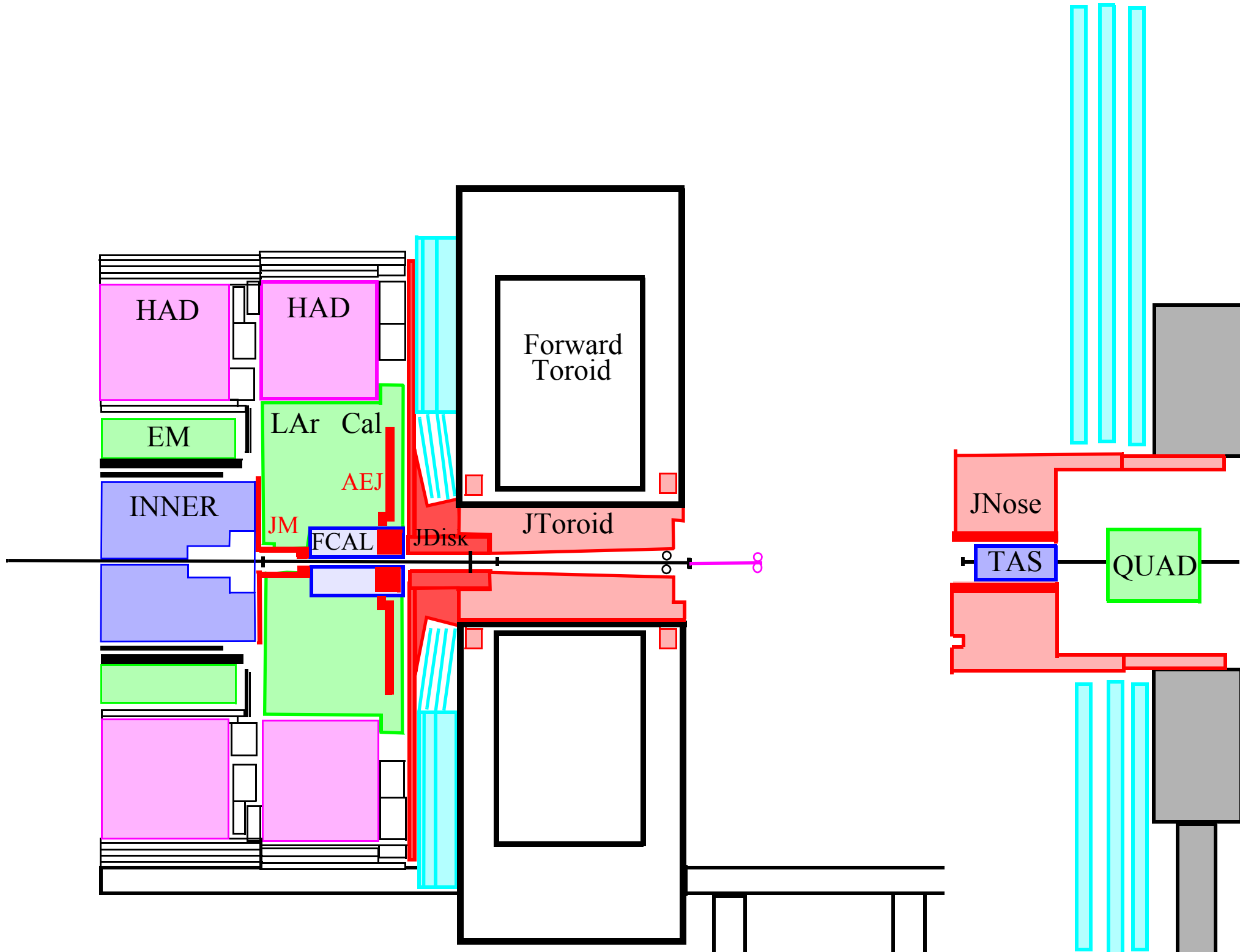
Move ECT.



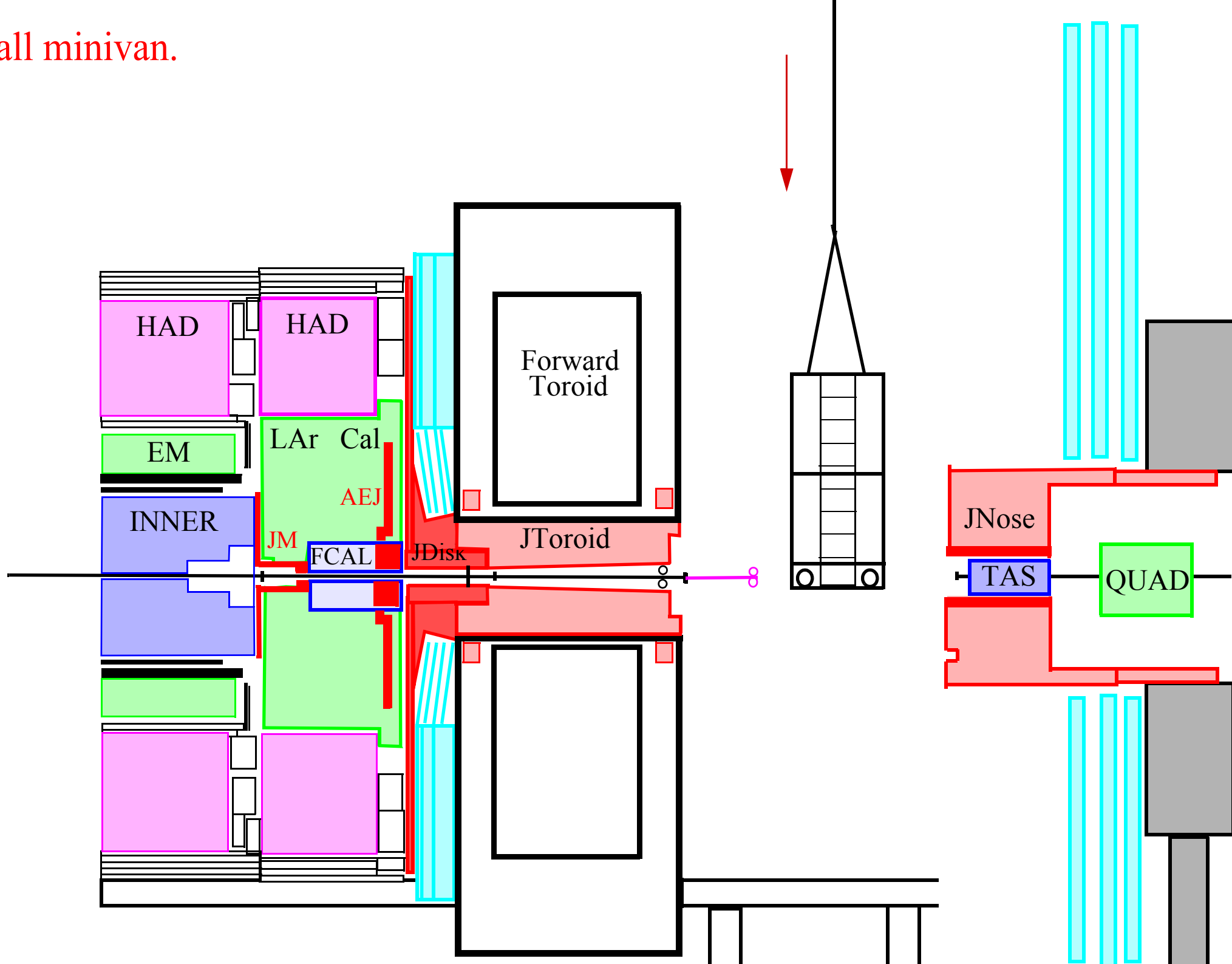


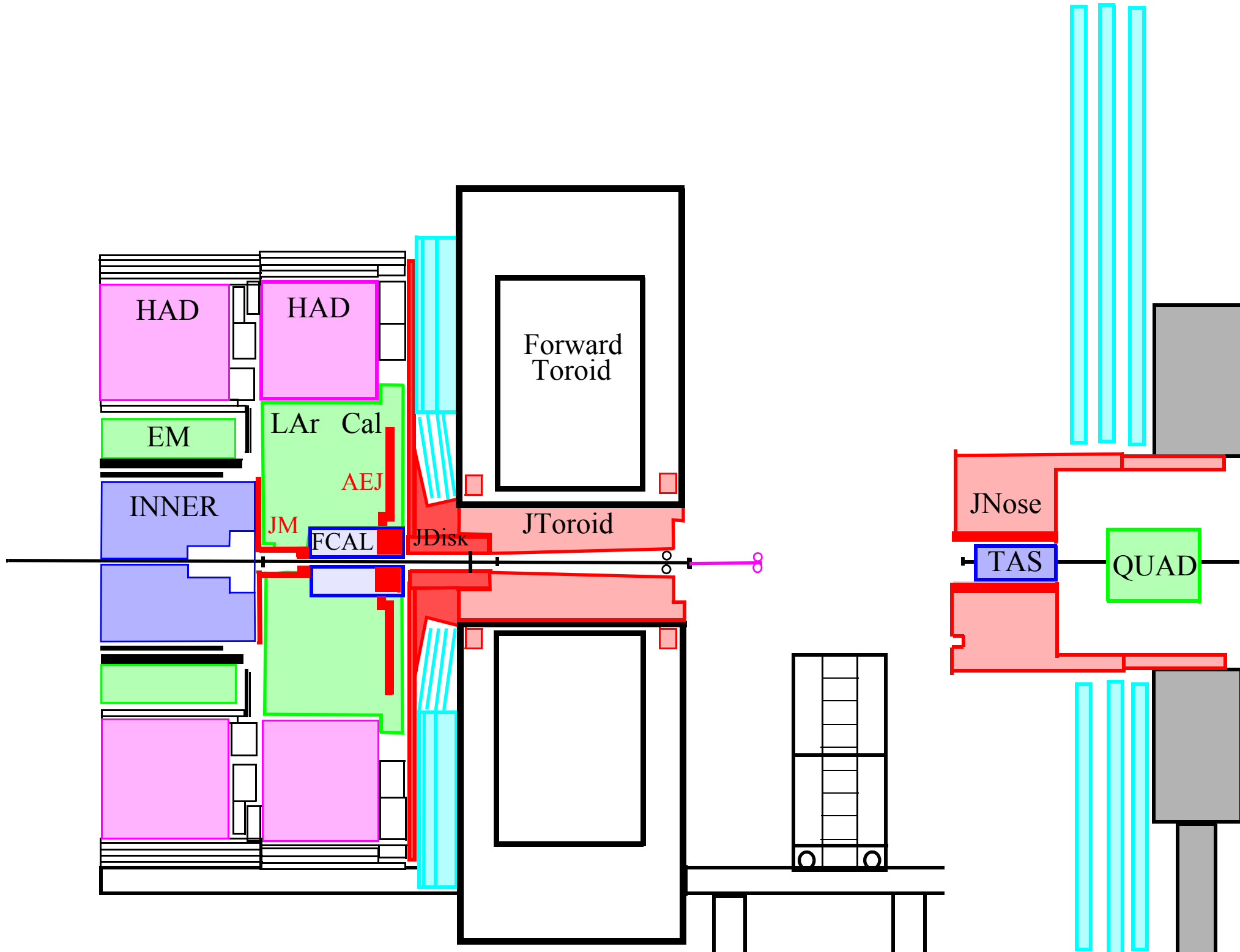


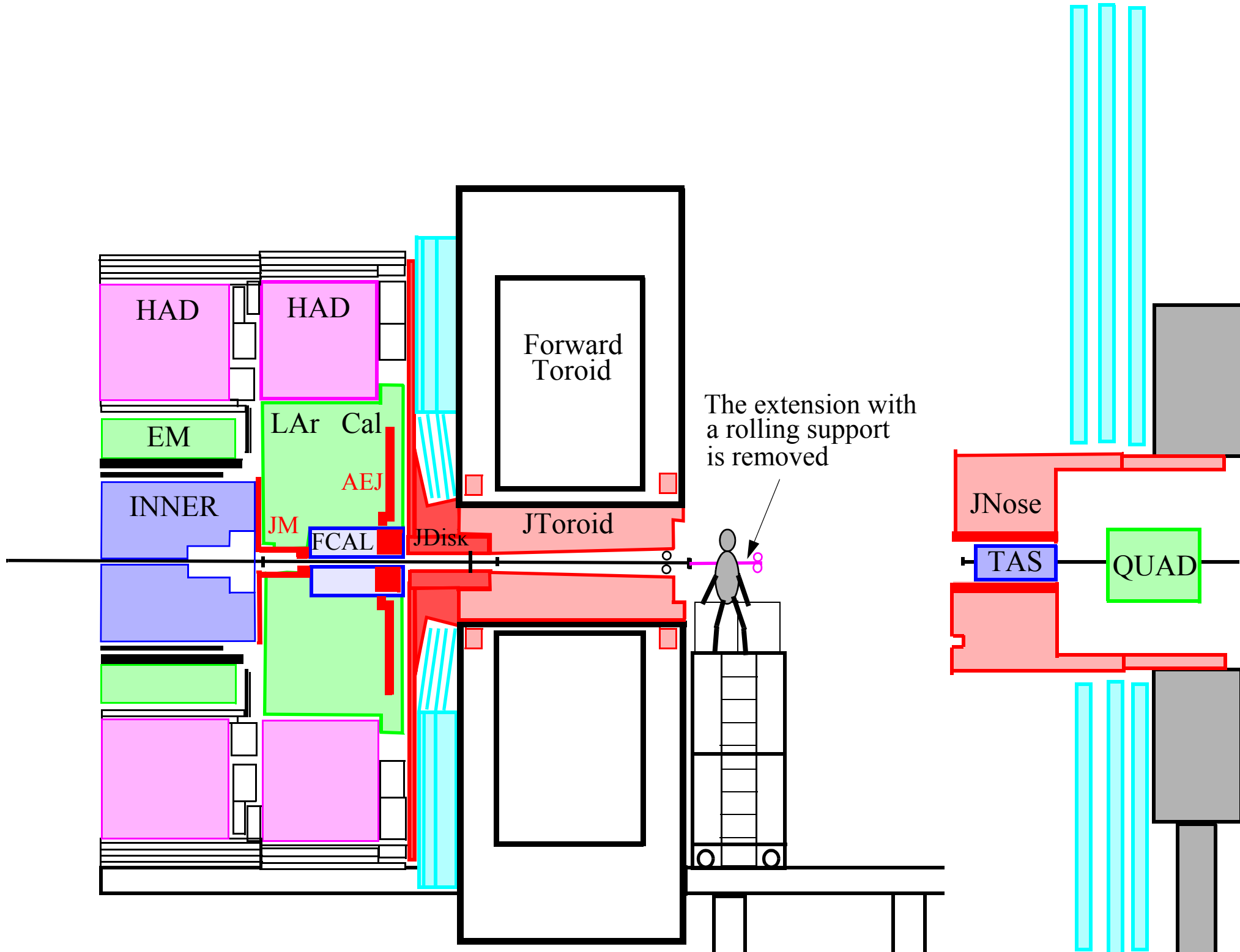


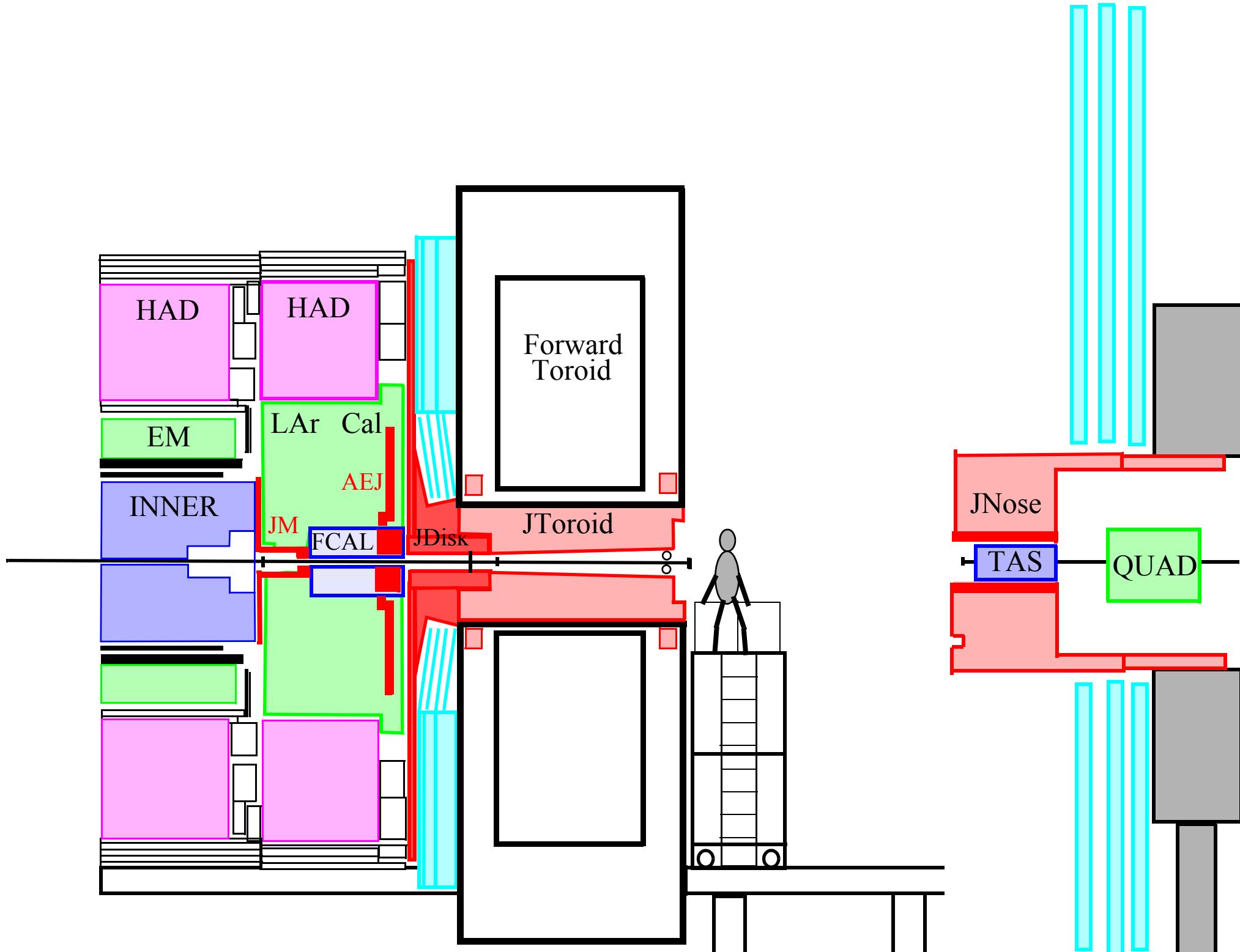


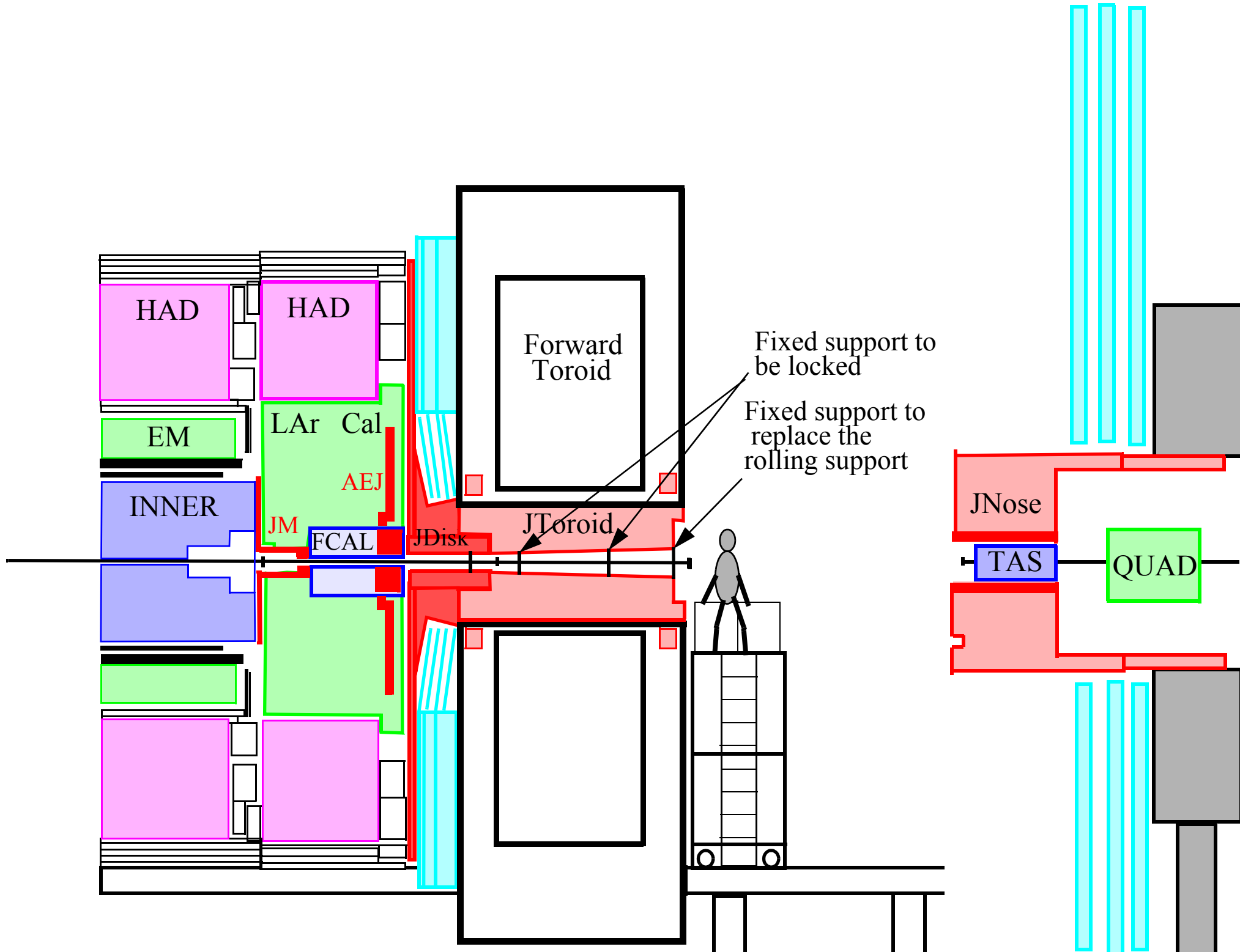
Install minivan.



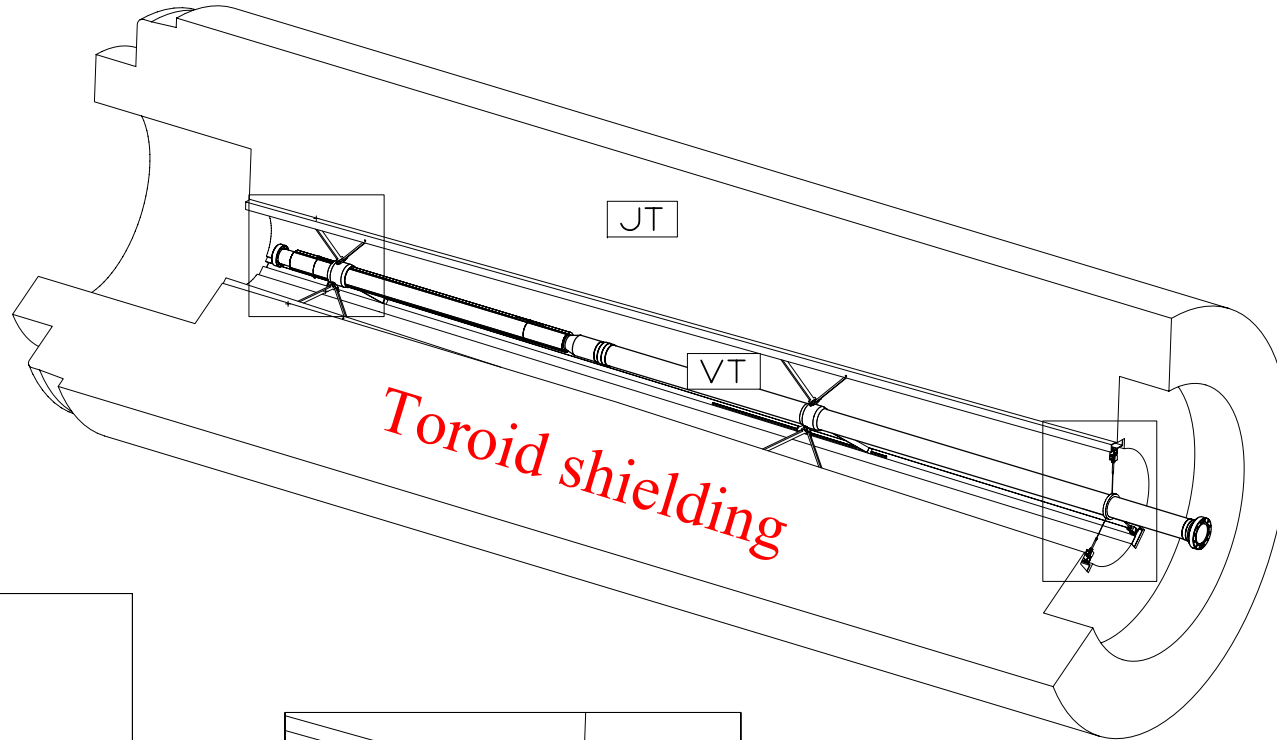




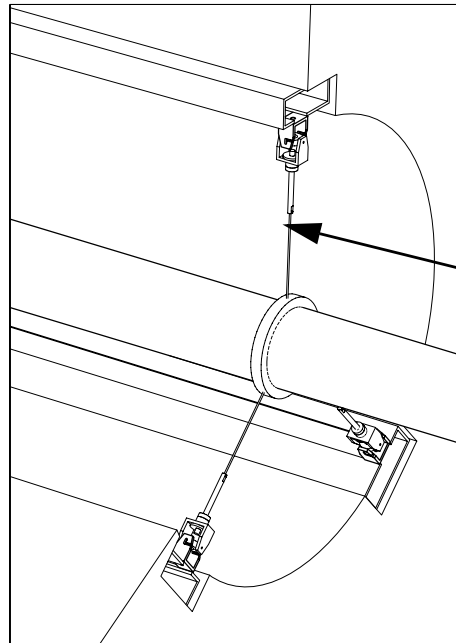
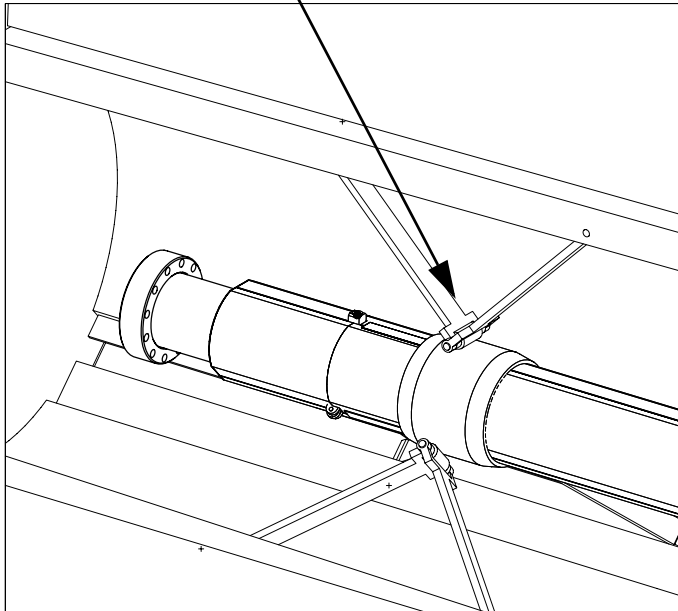
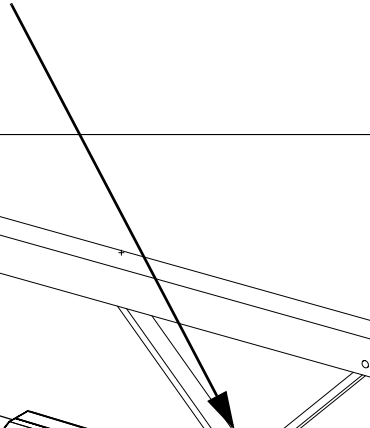




Beampipe supports

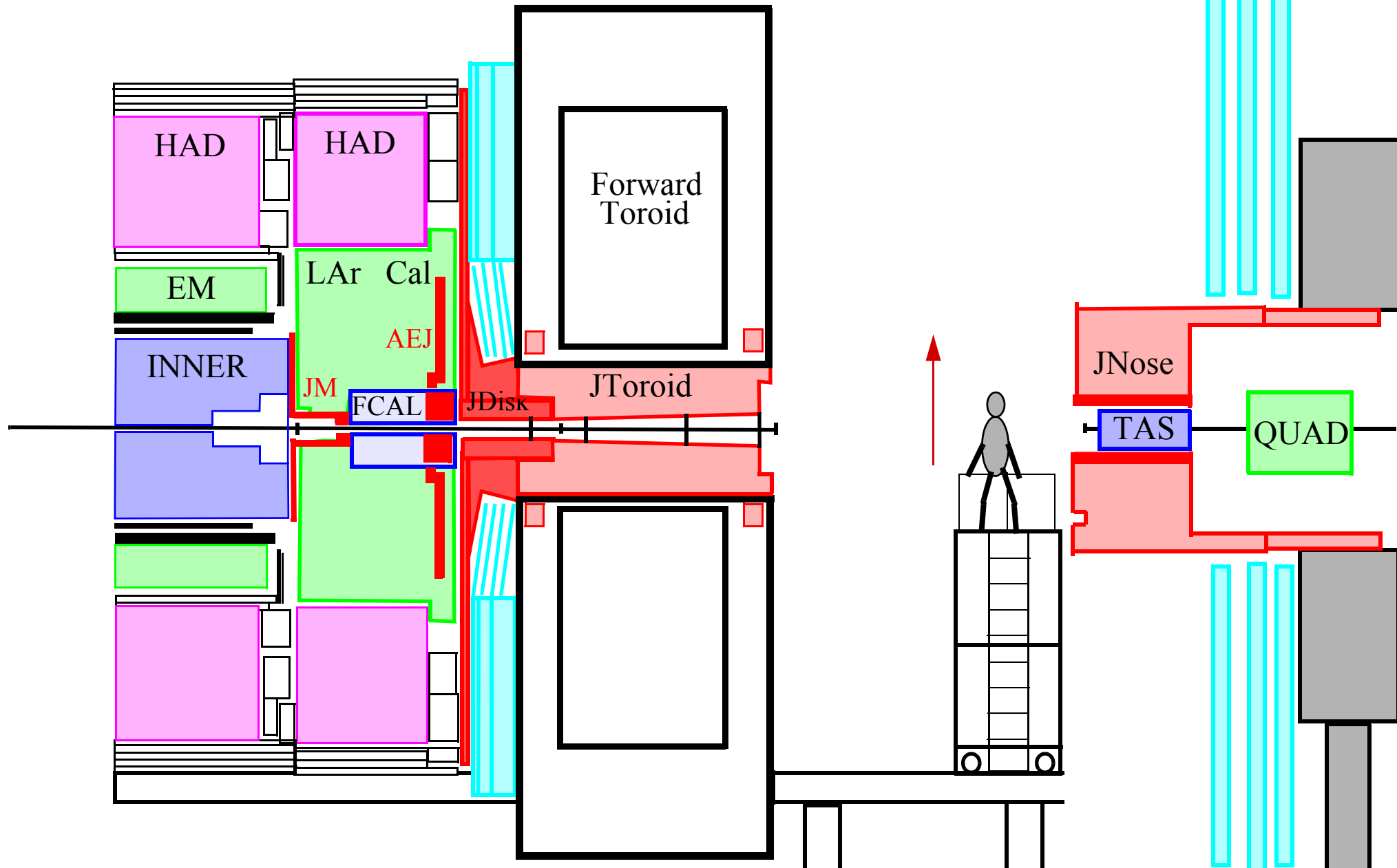


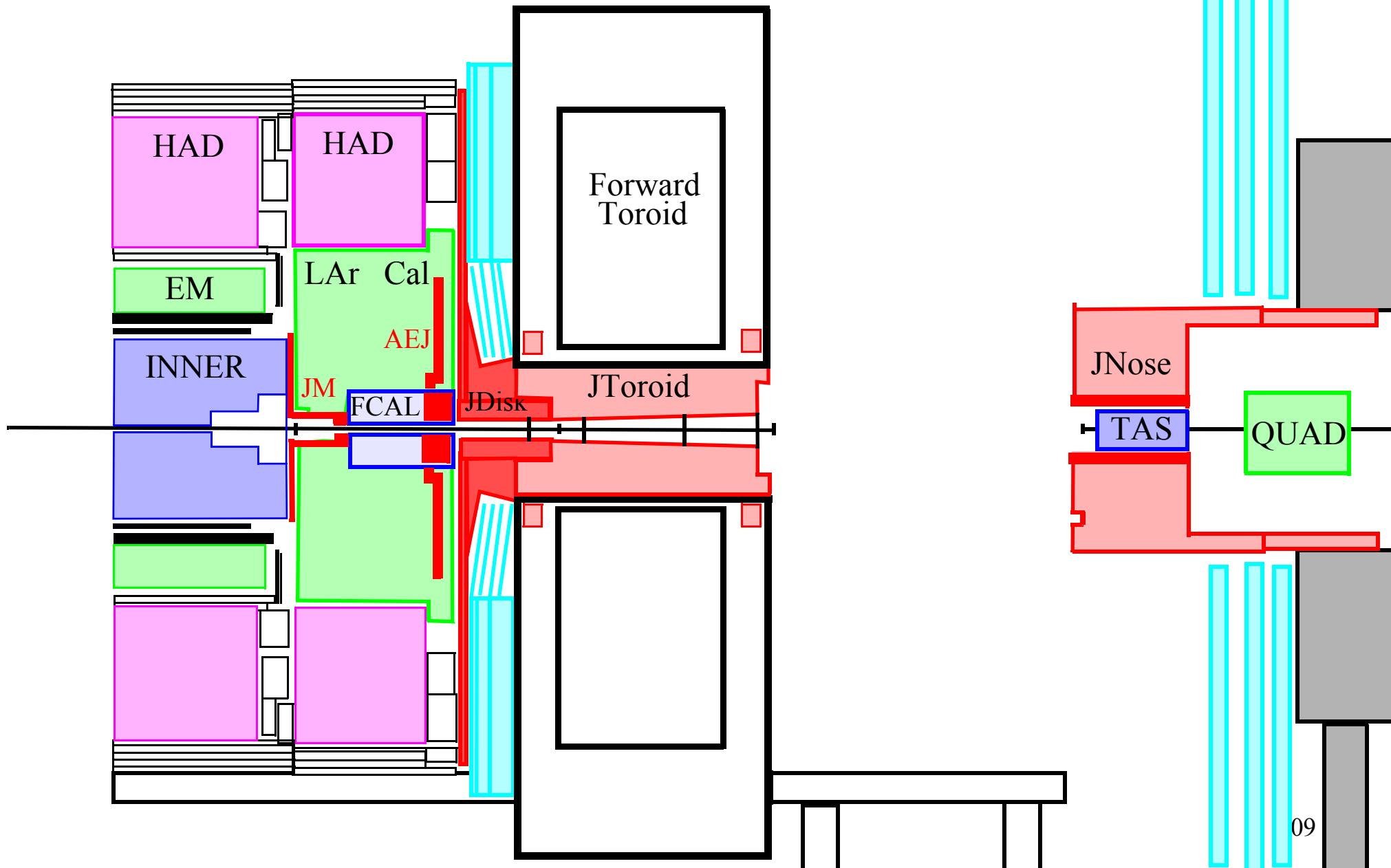
This support has to be locked.



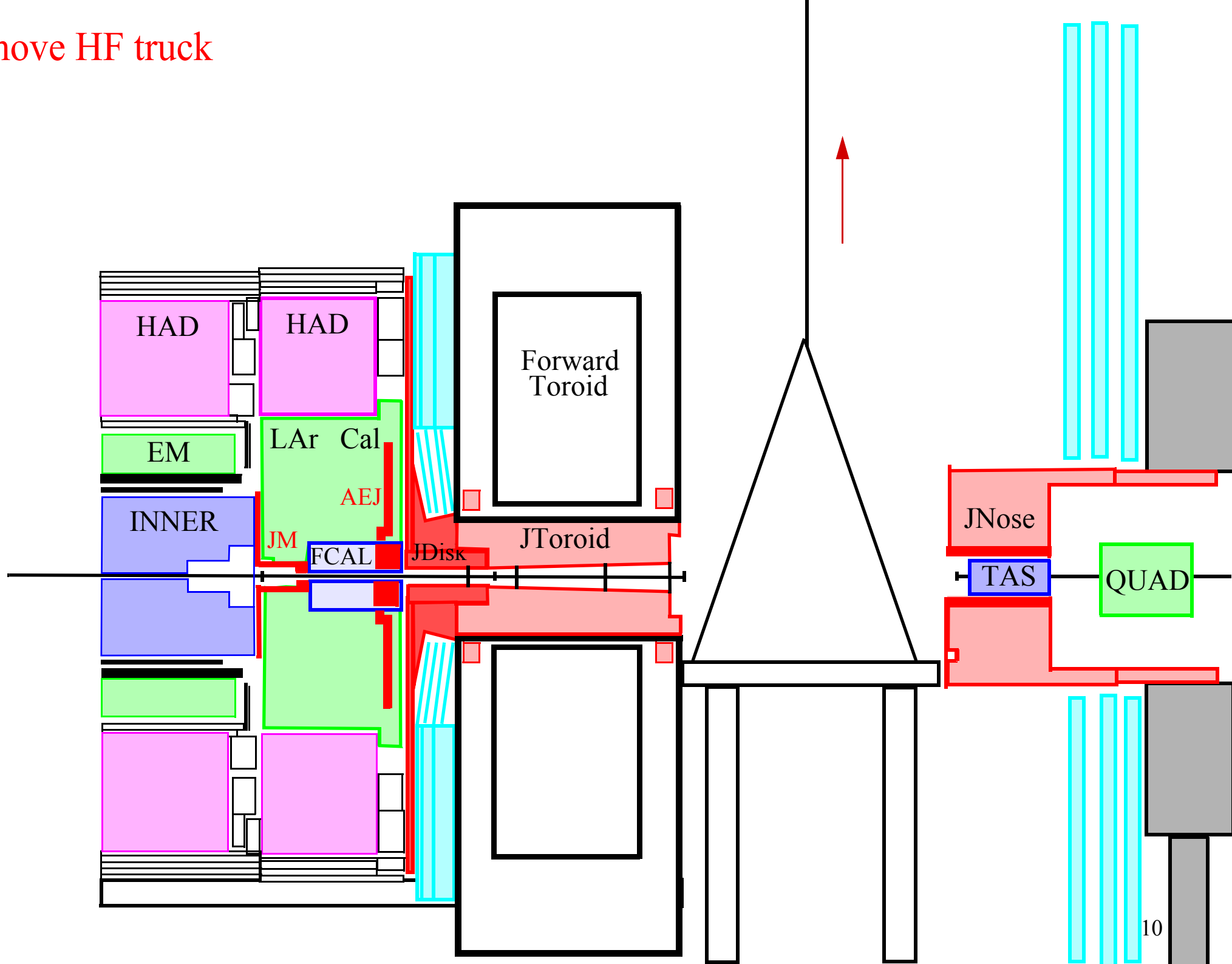
This support has to be attached and the rolling support has to be removed.

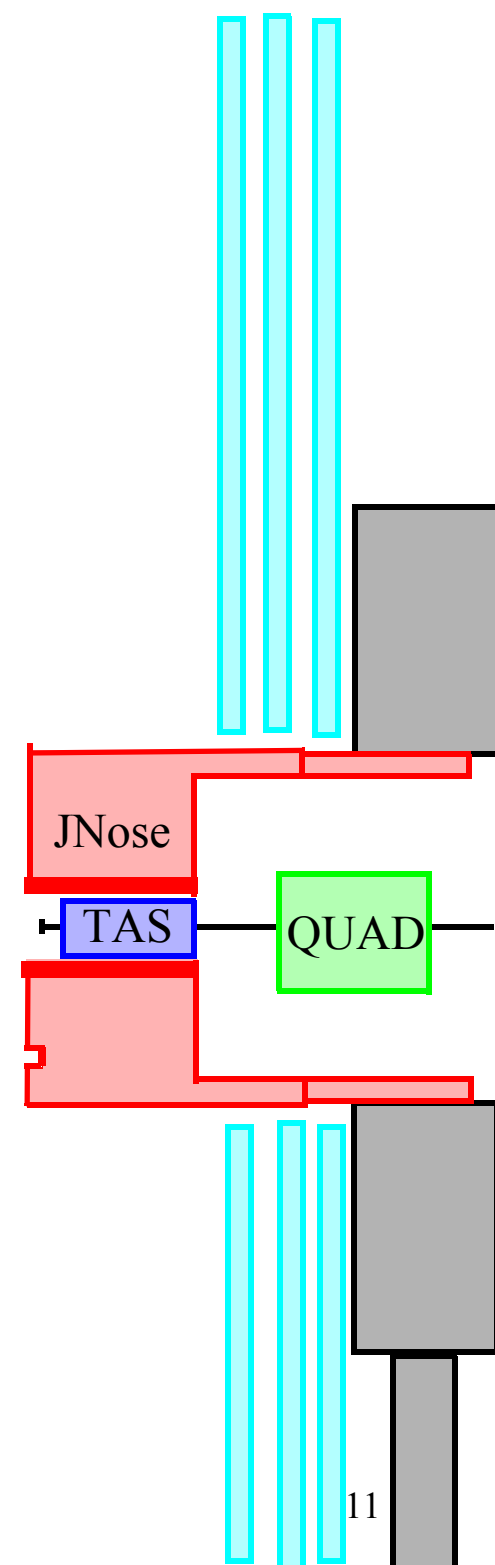
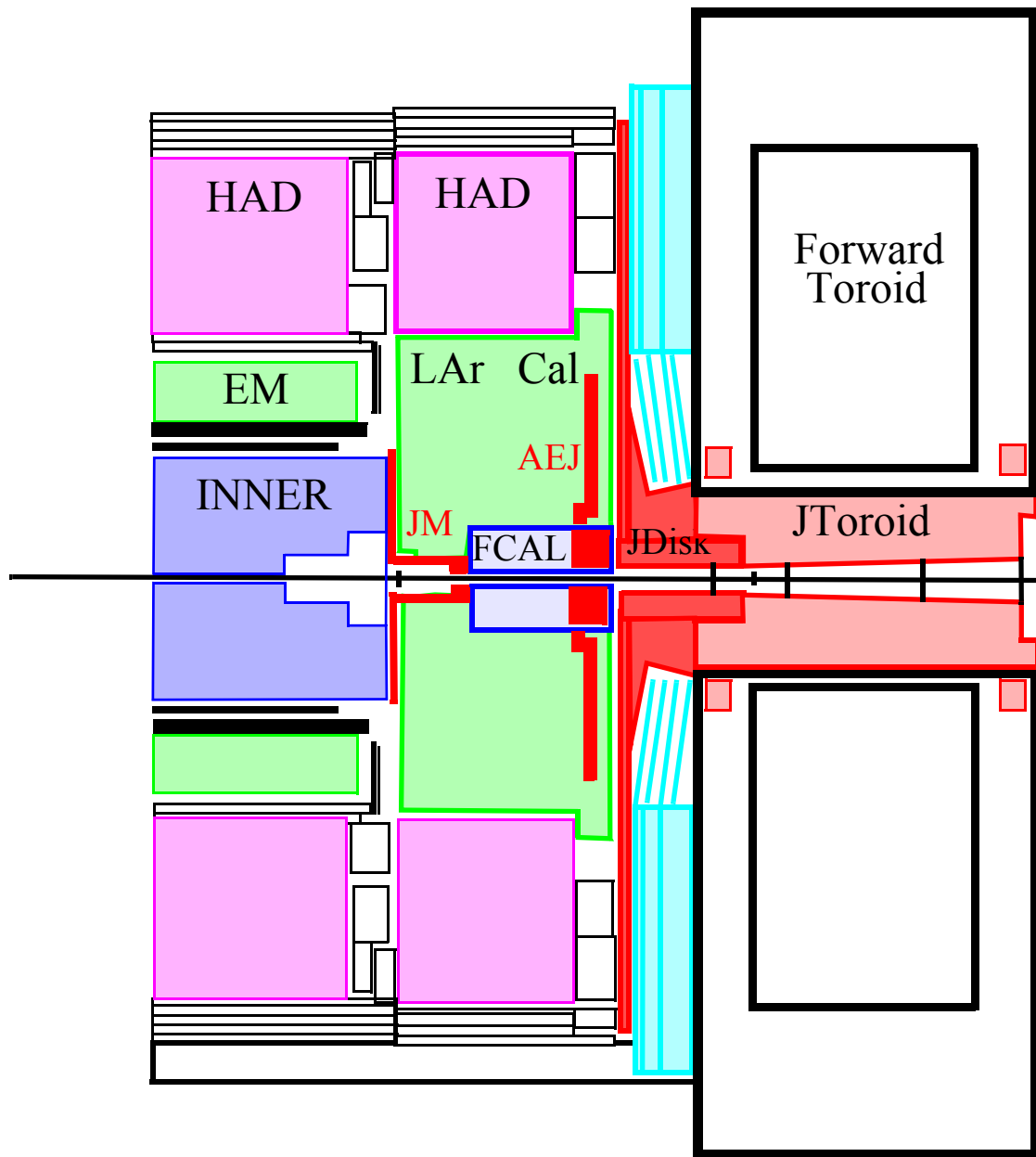
Remove minivan.



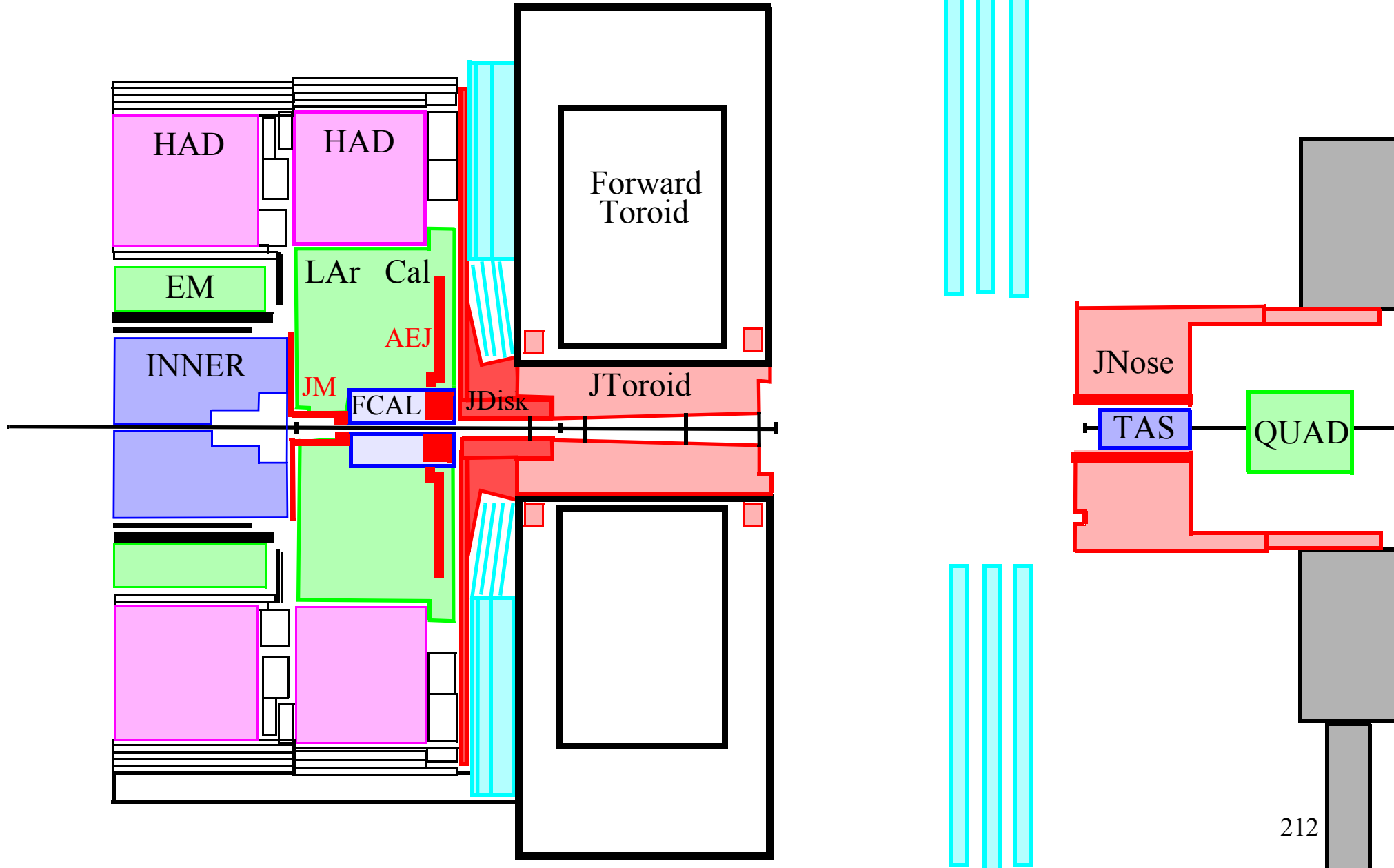


Remove HF truck

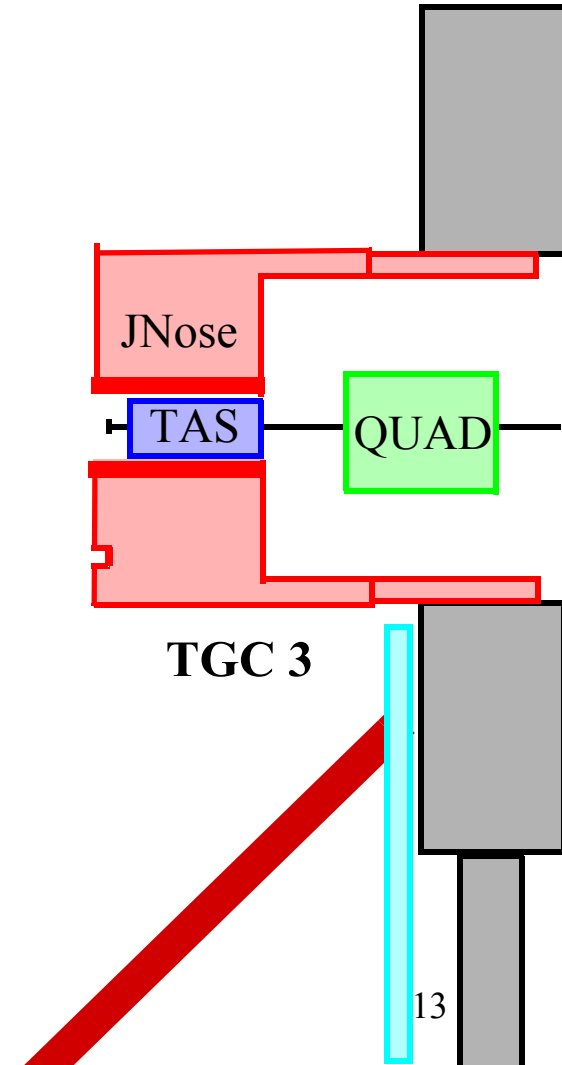
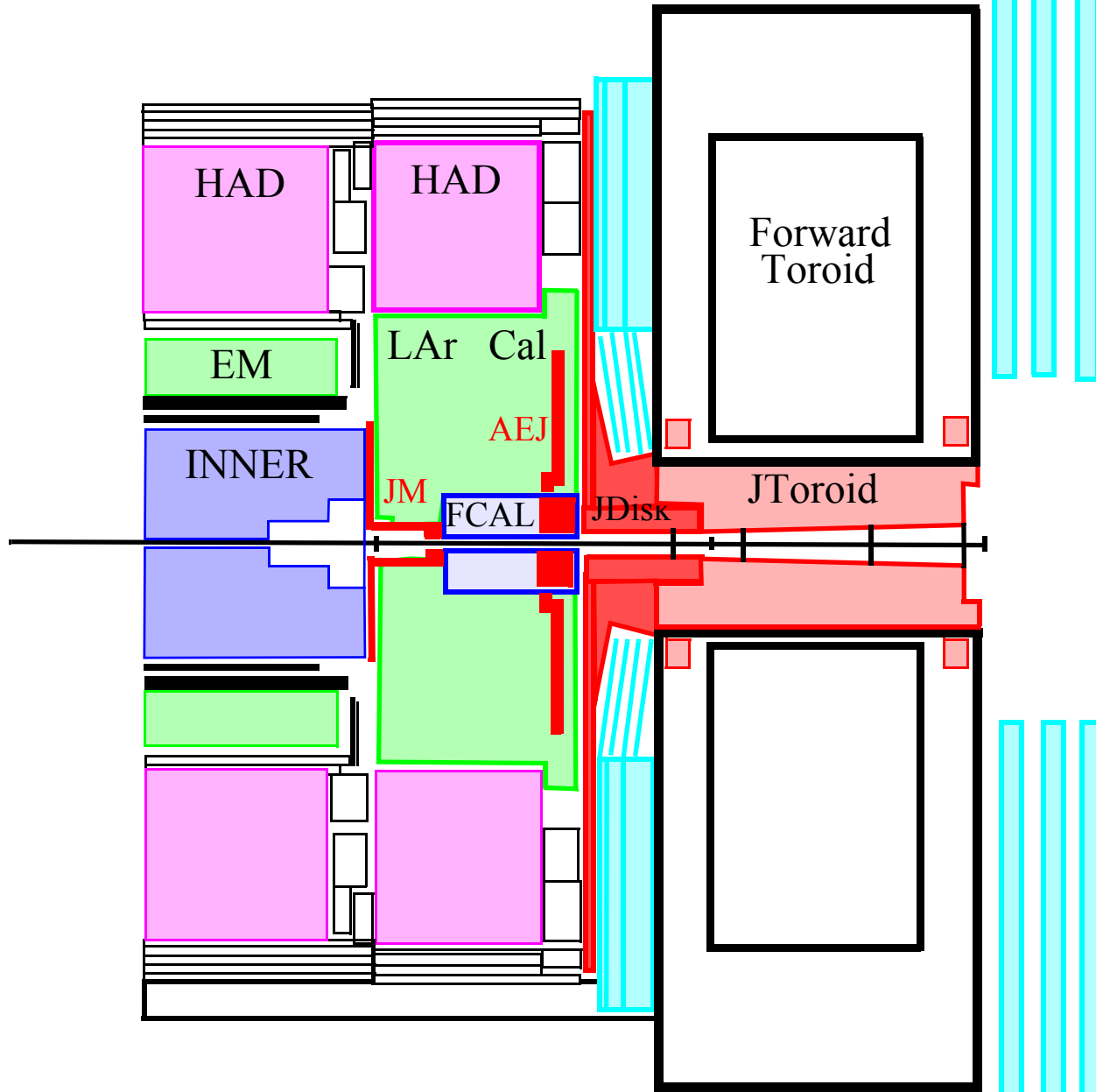


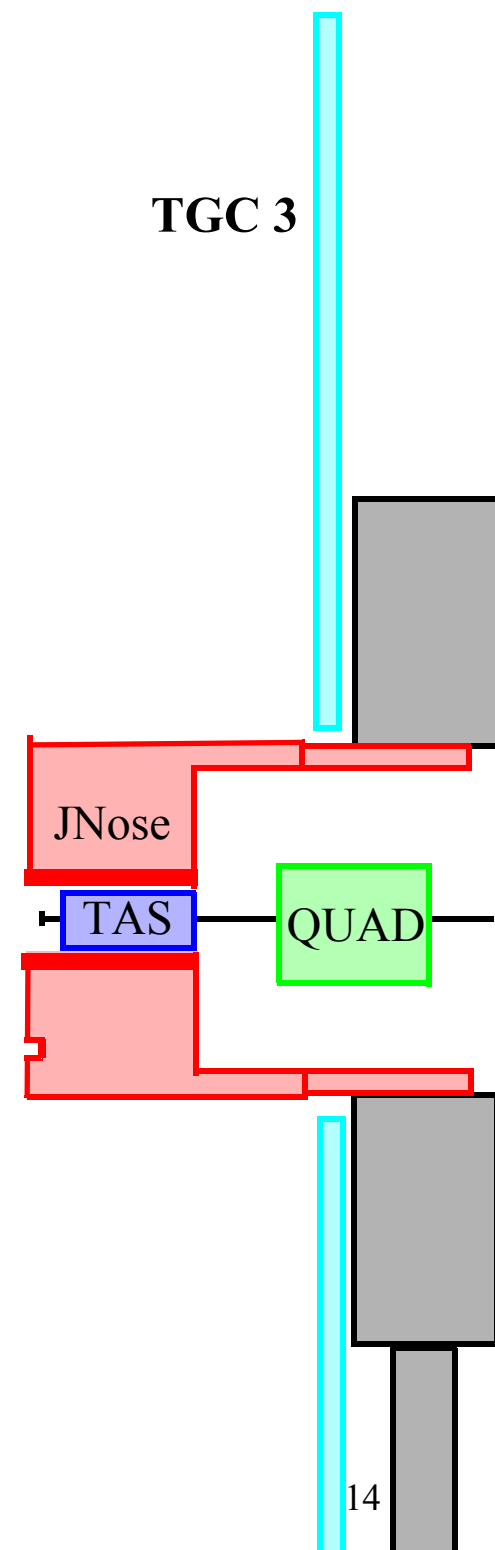
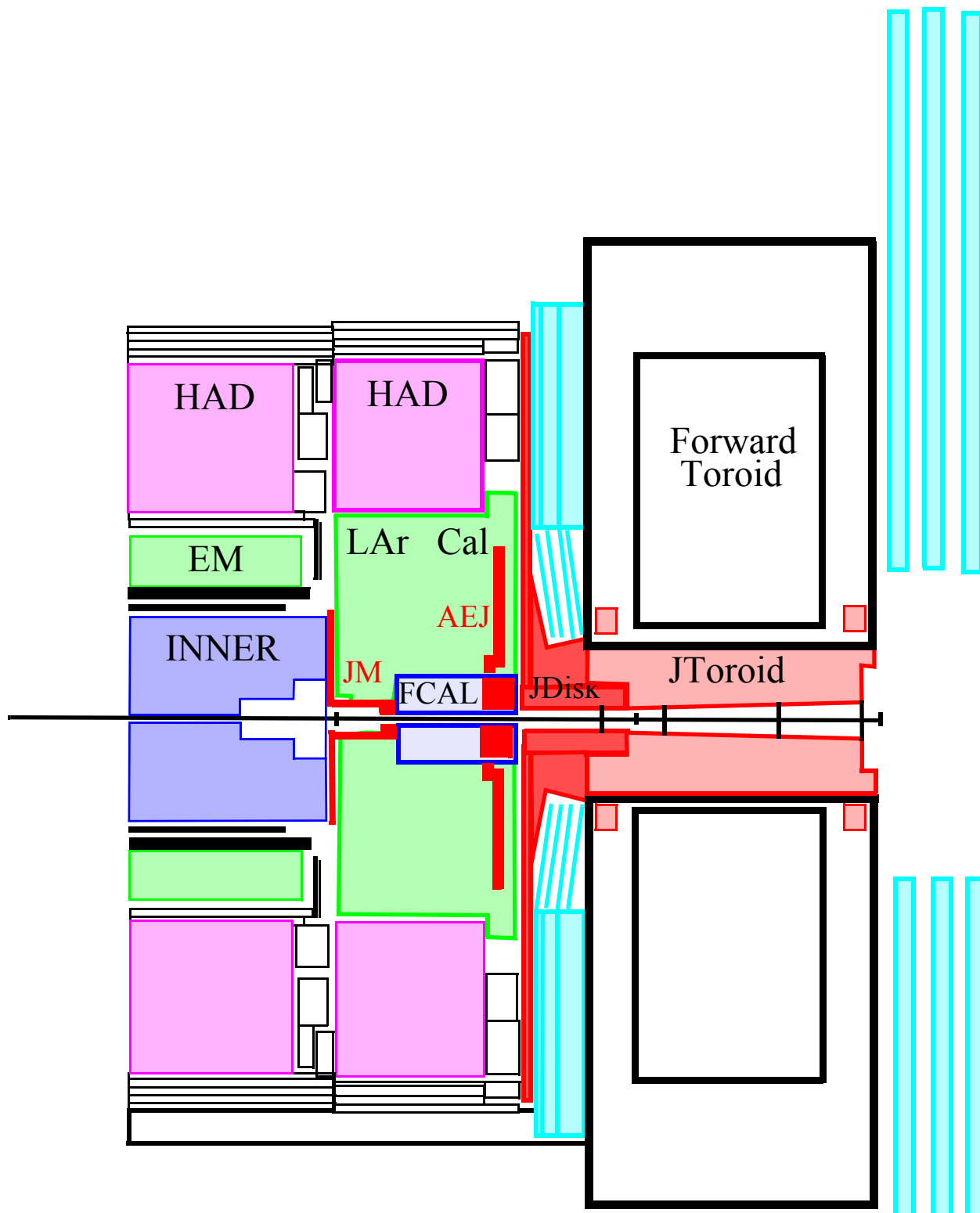


Move Big Wheel.

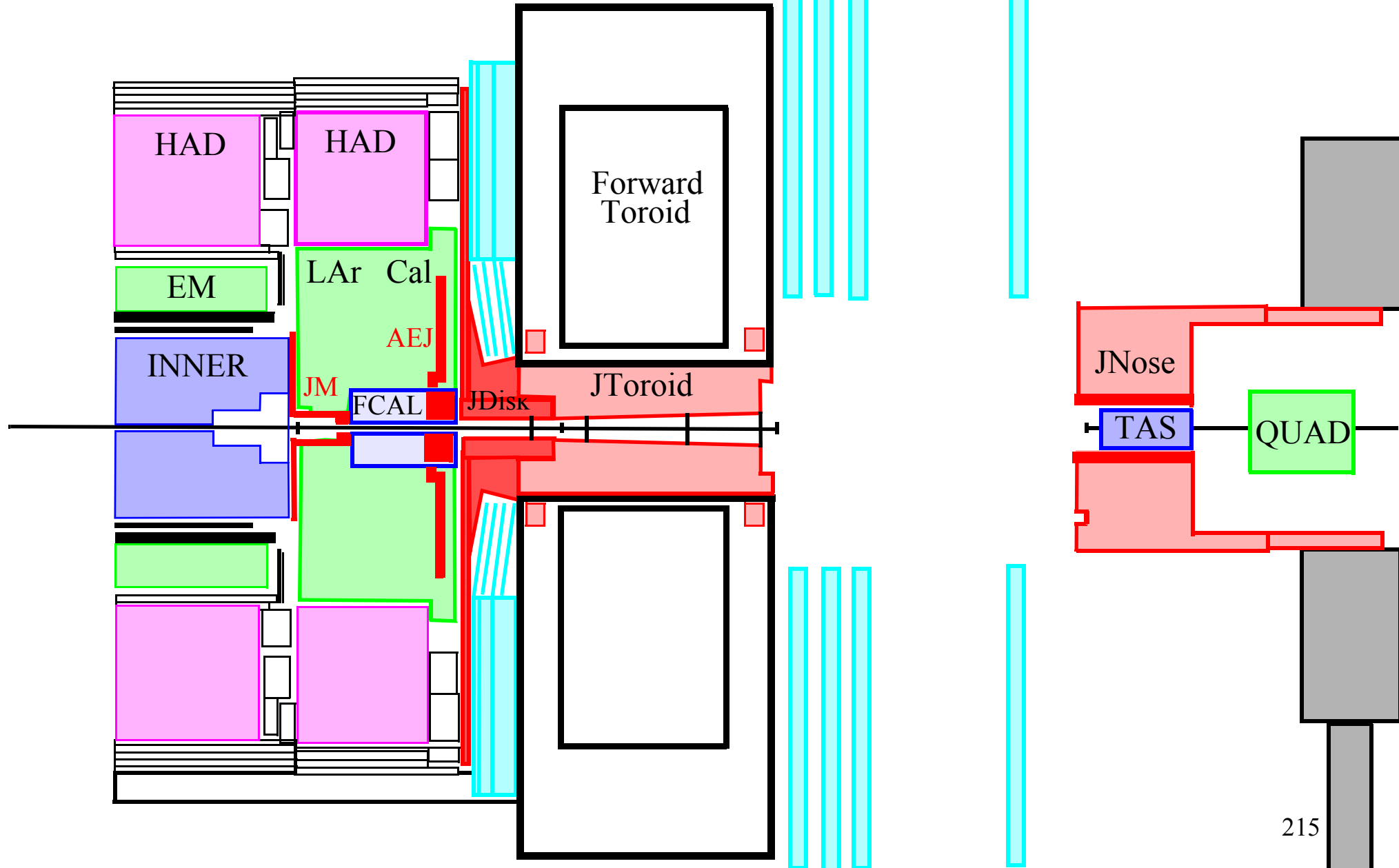


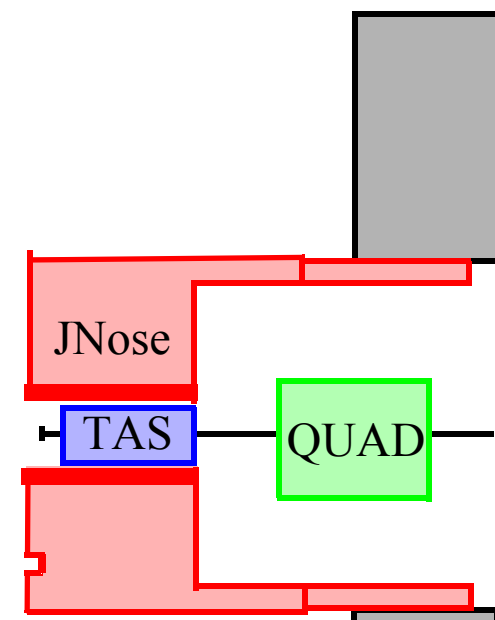
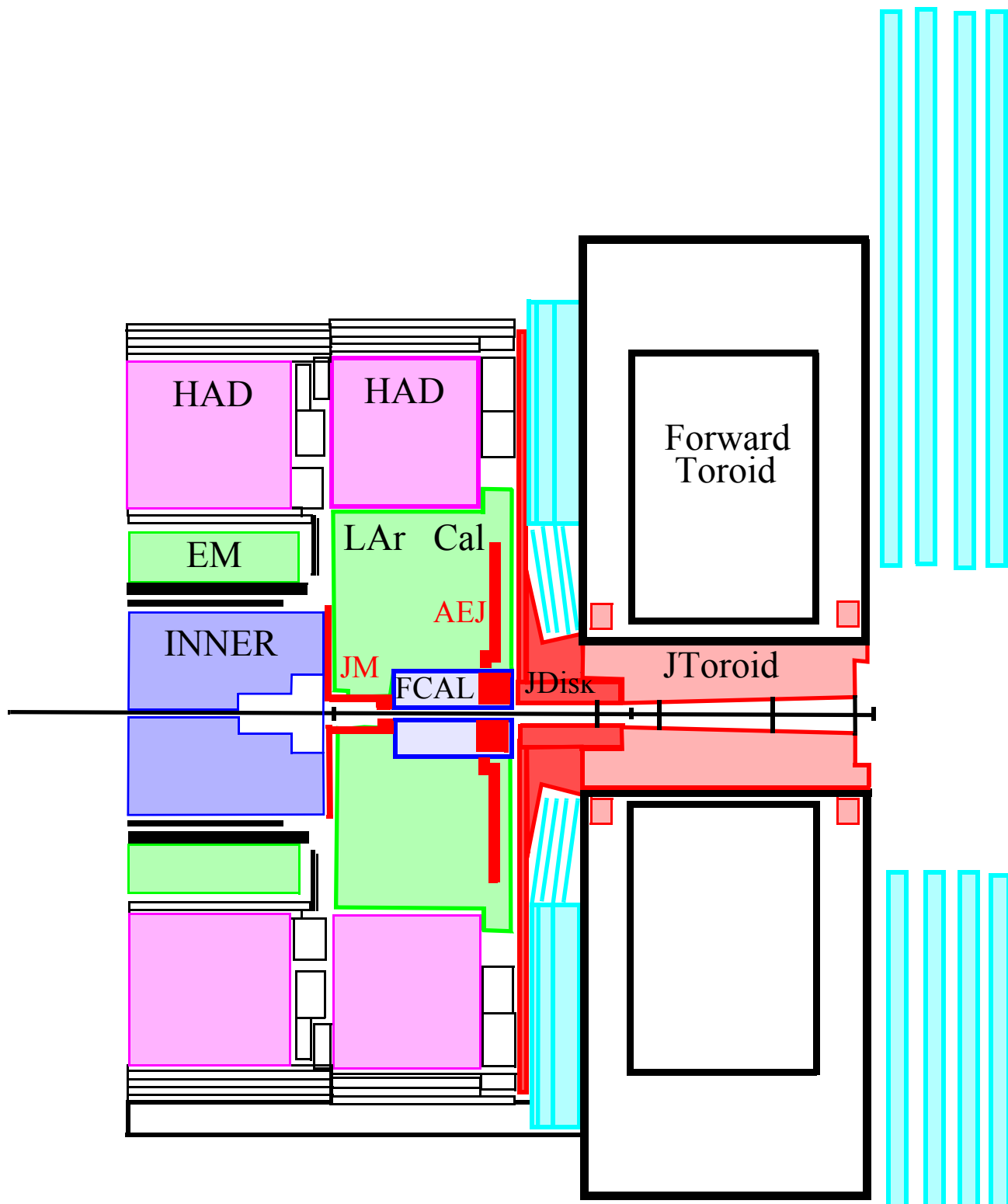
Install TGC 3.



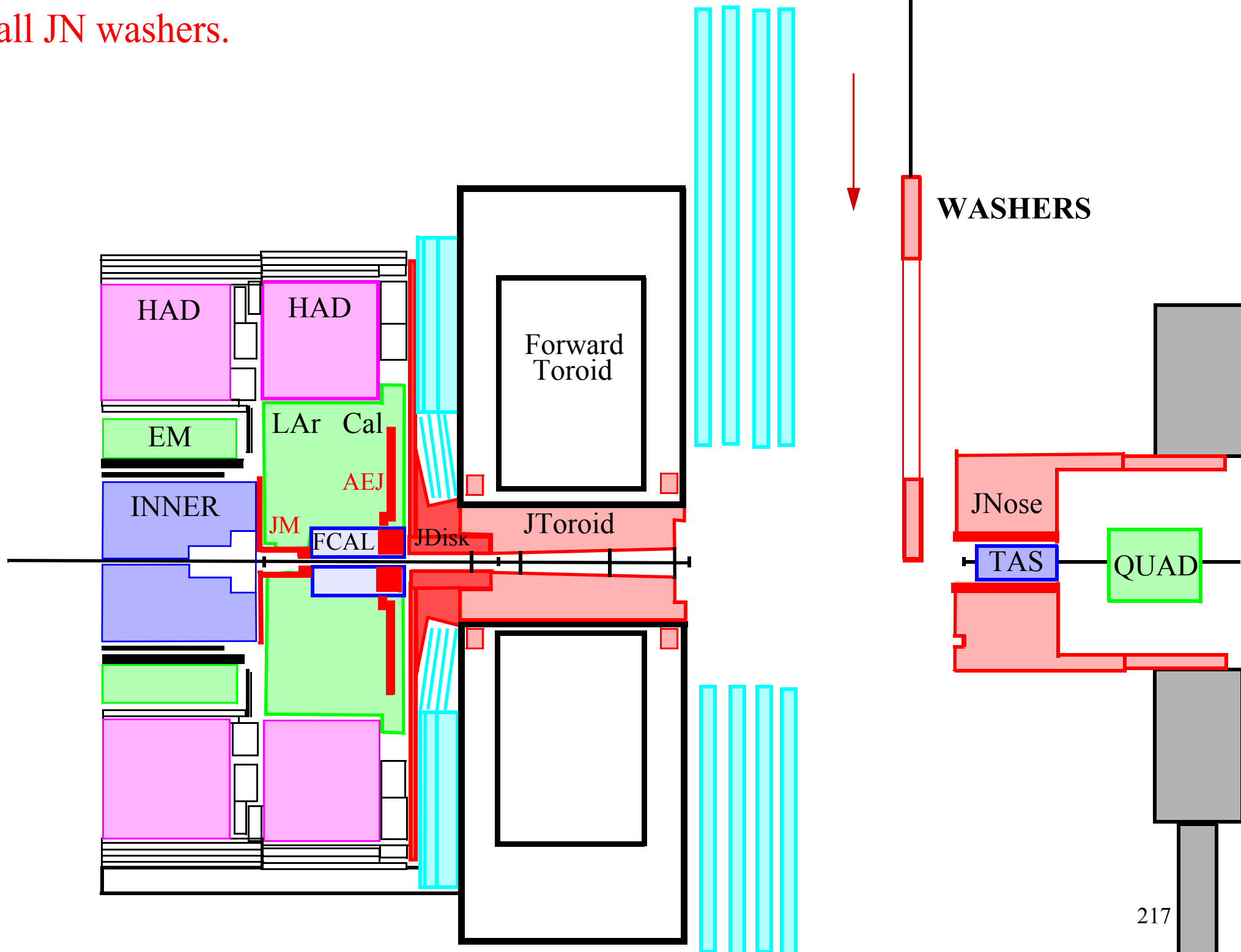


Move TGC 3.

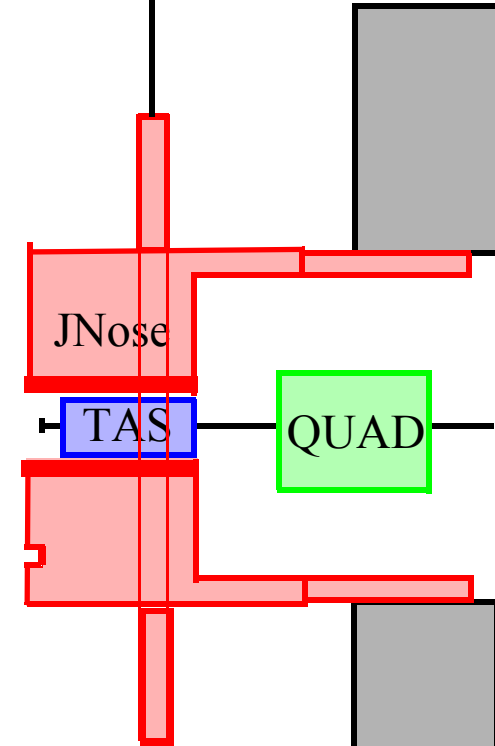
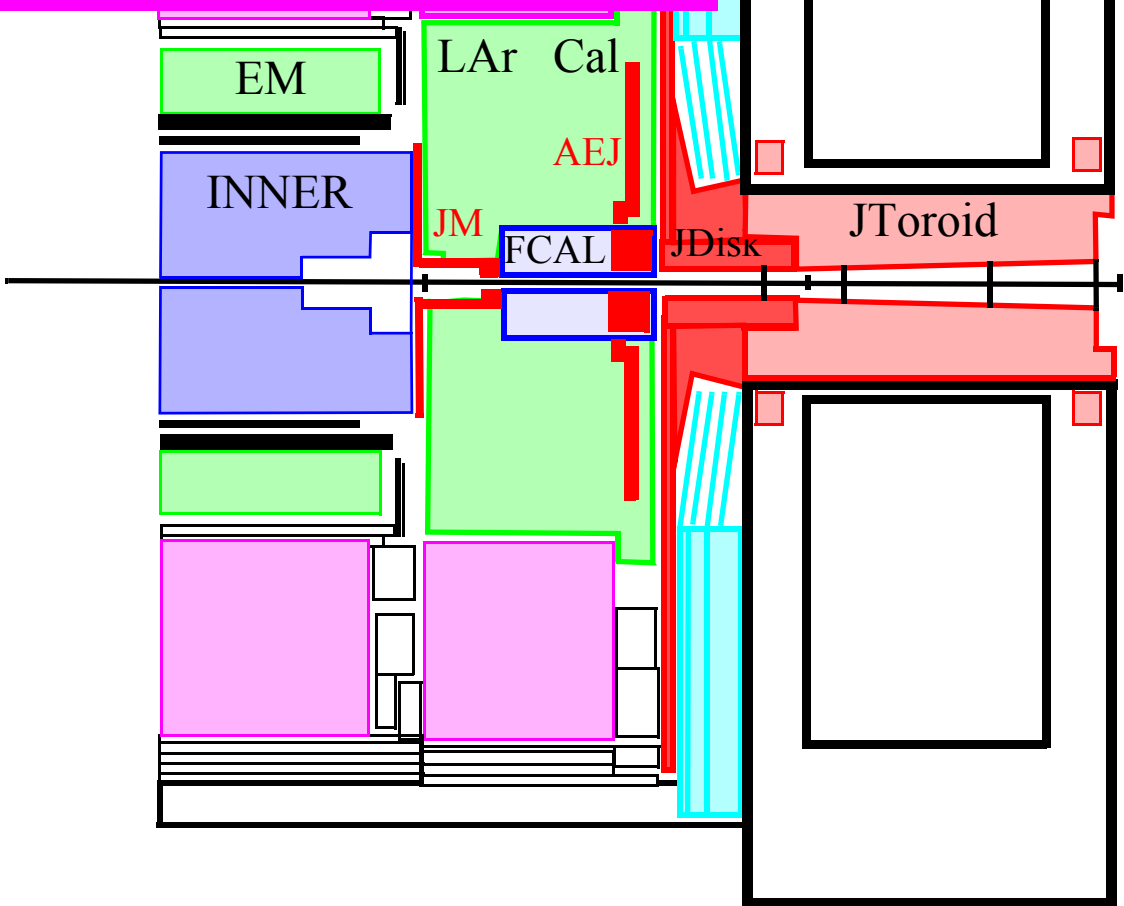
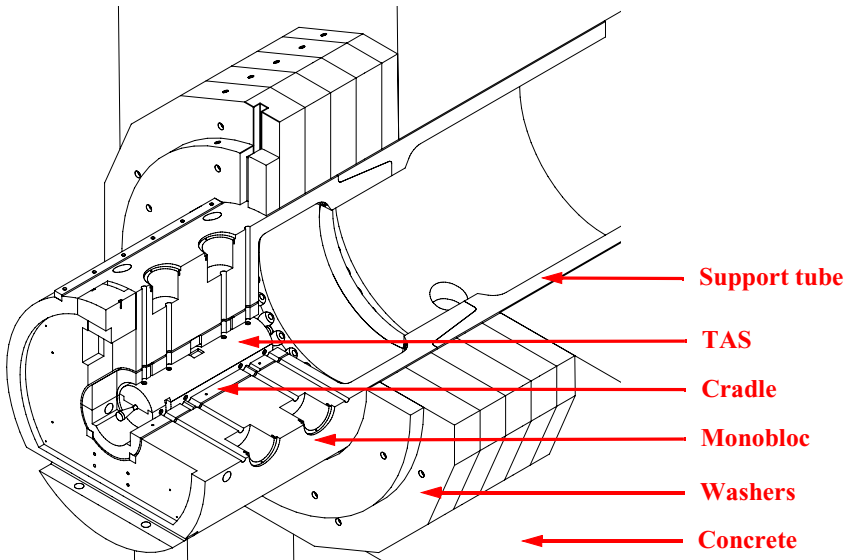


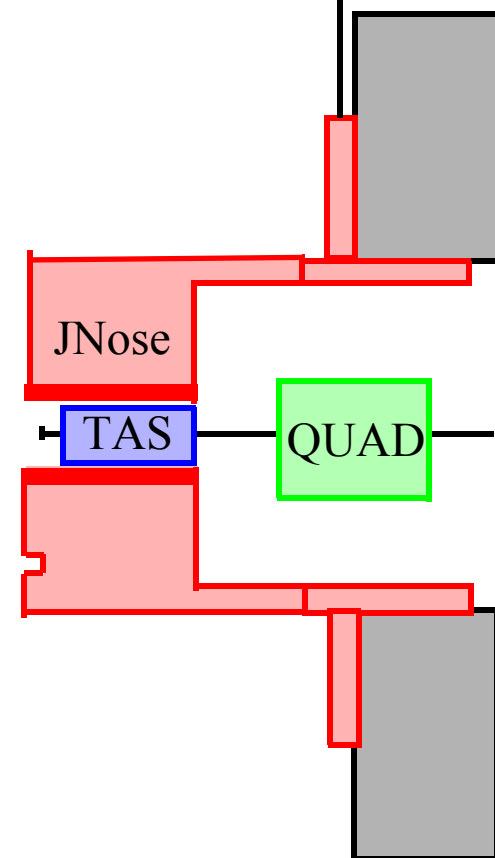
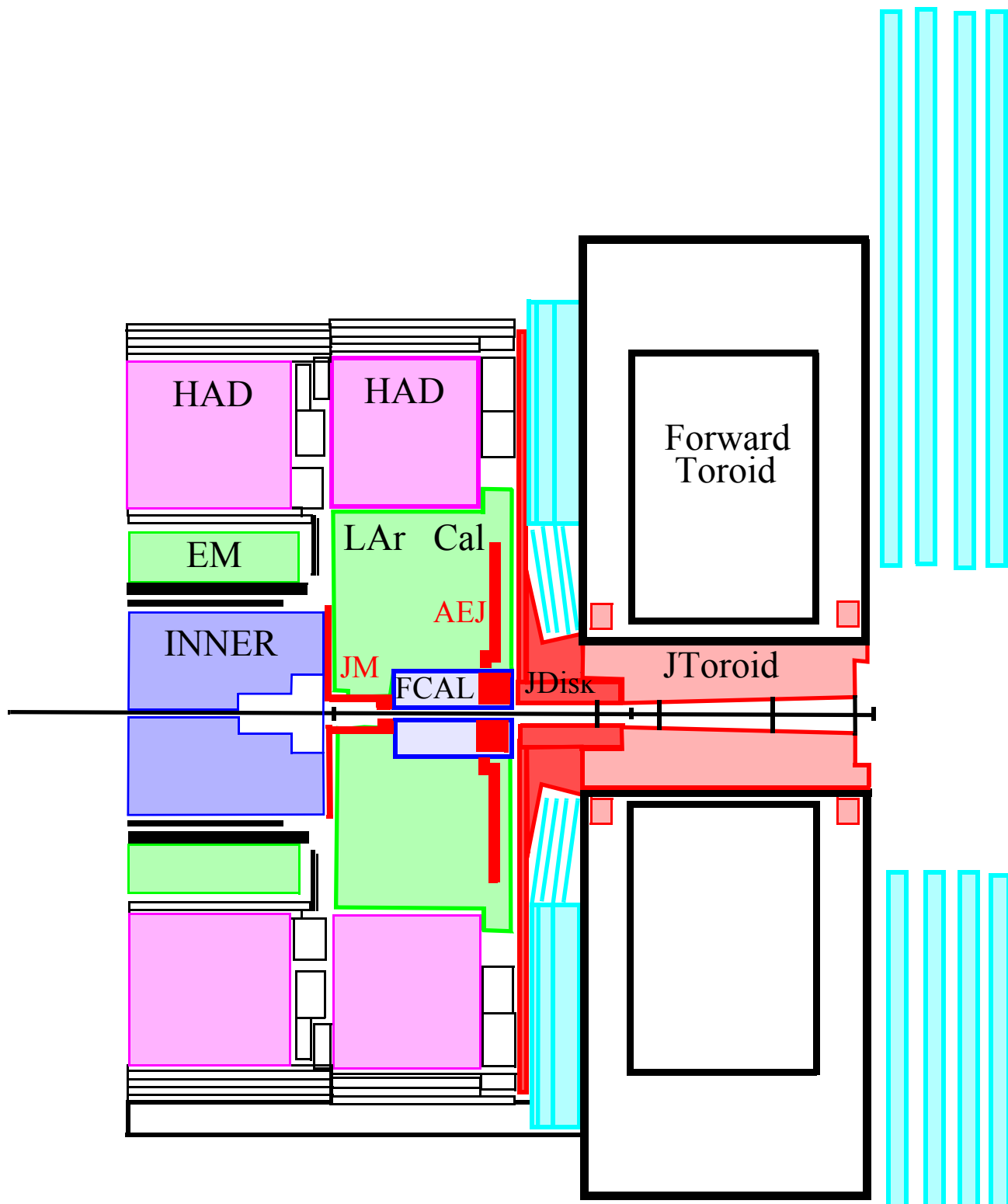


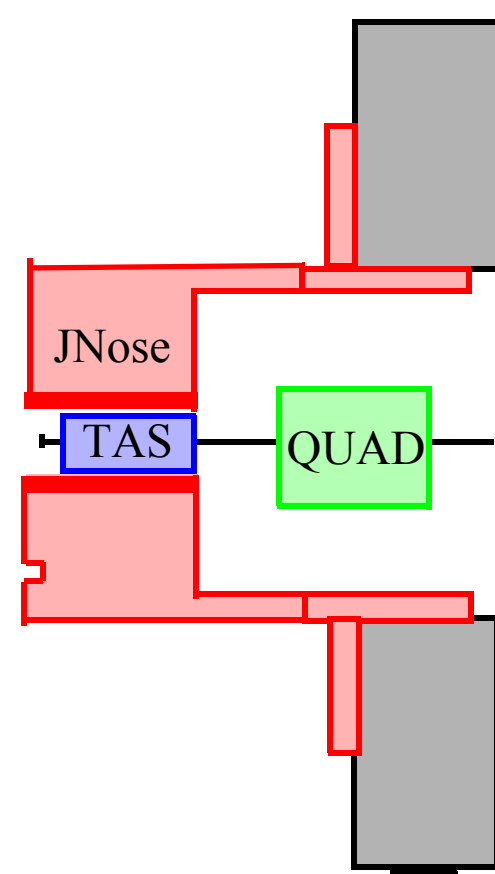
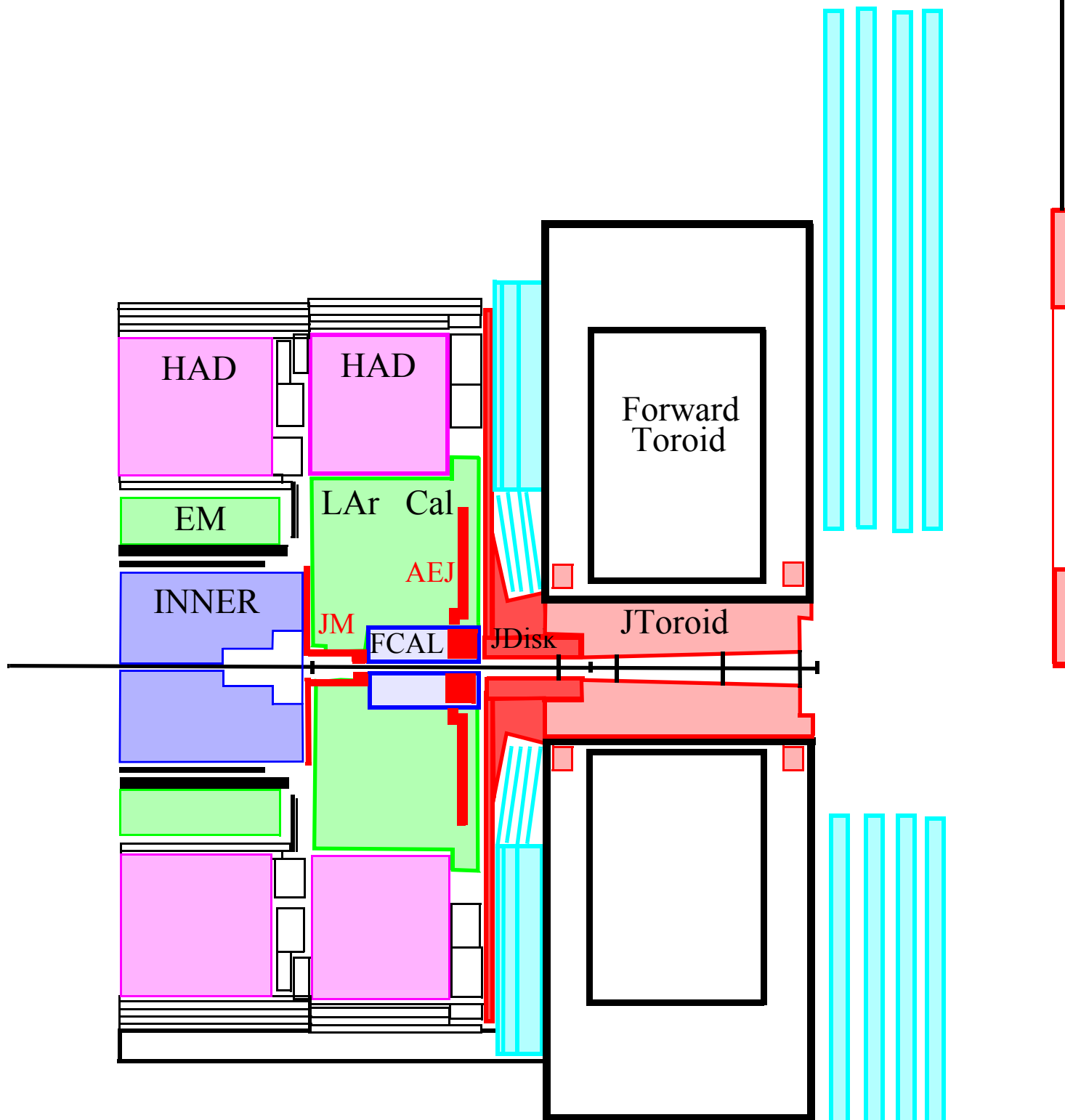
Install JN washers.



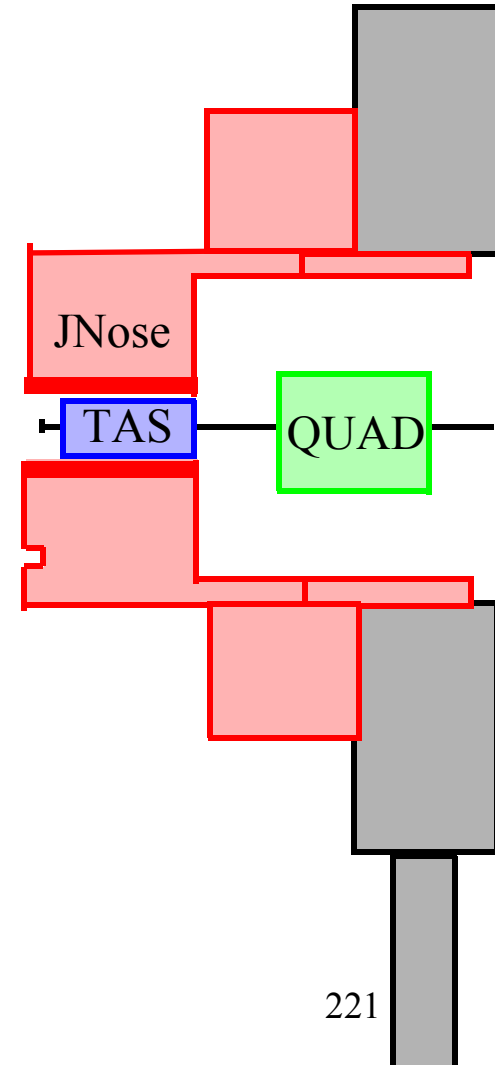
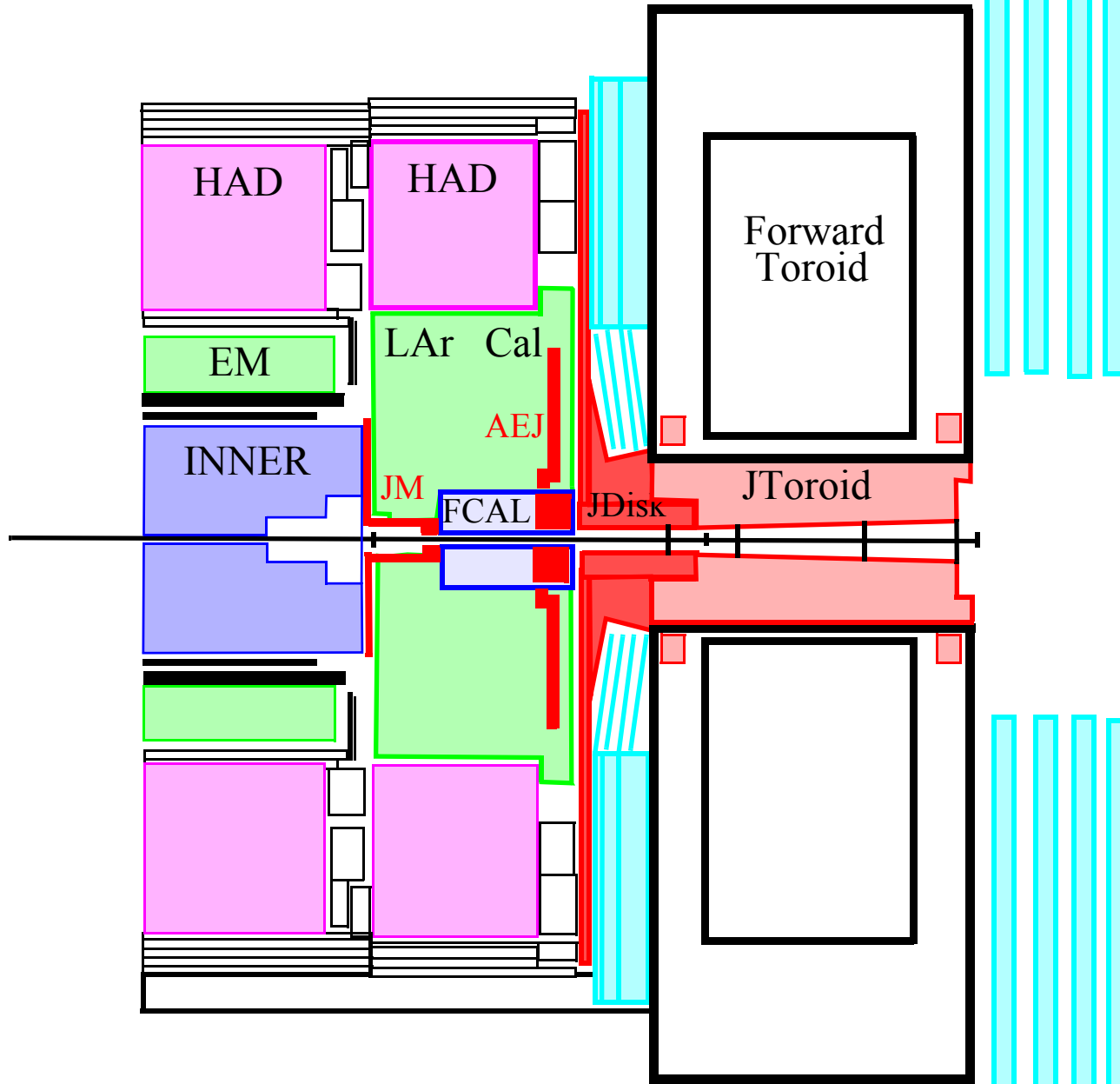
The Nose Shielding - JN

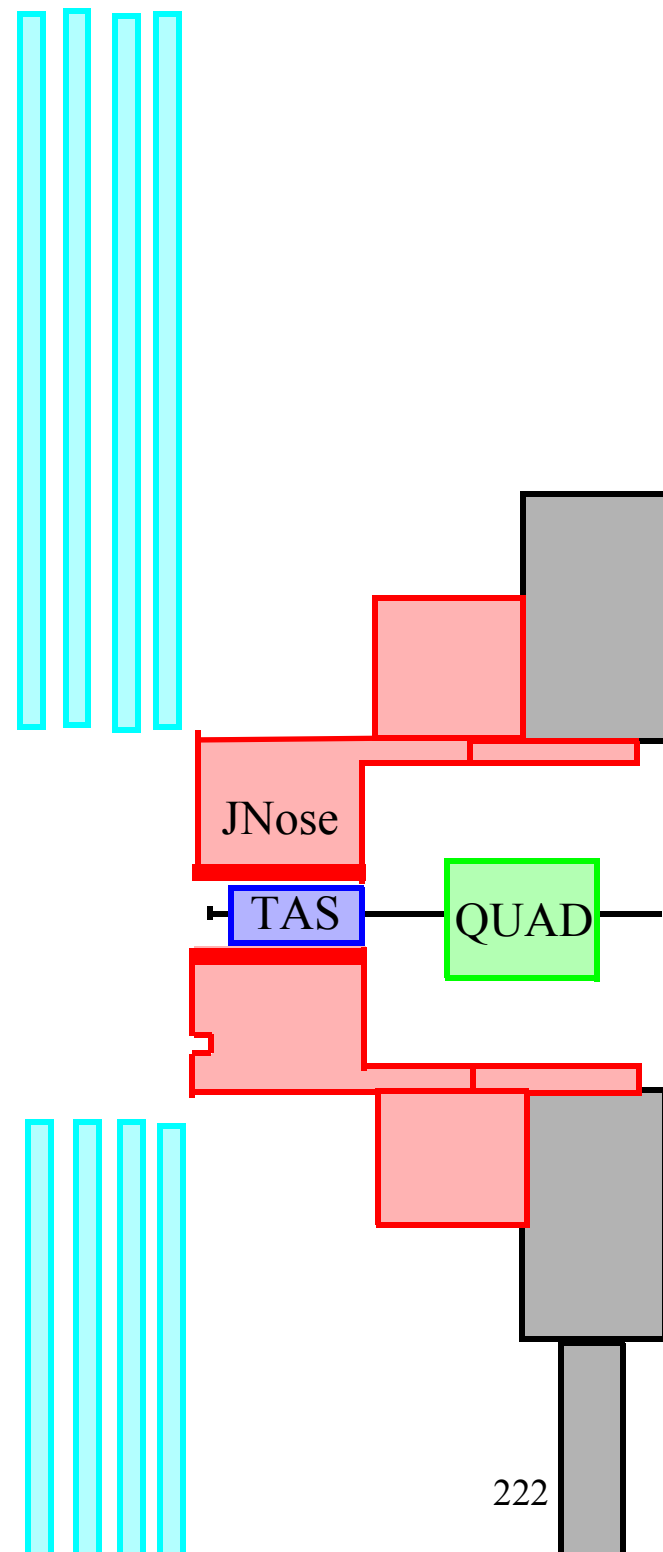
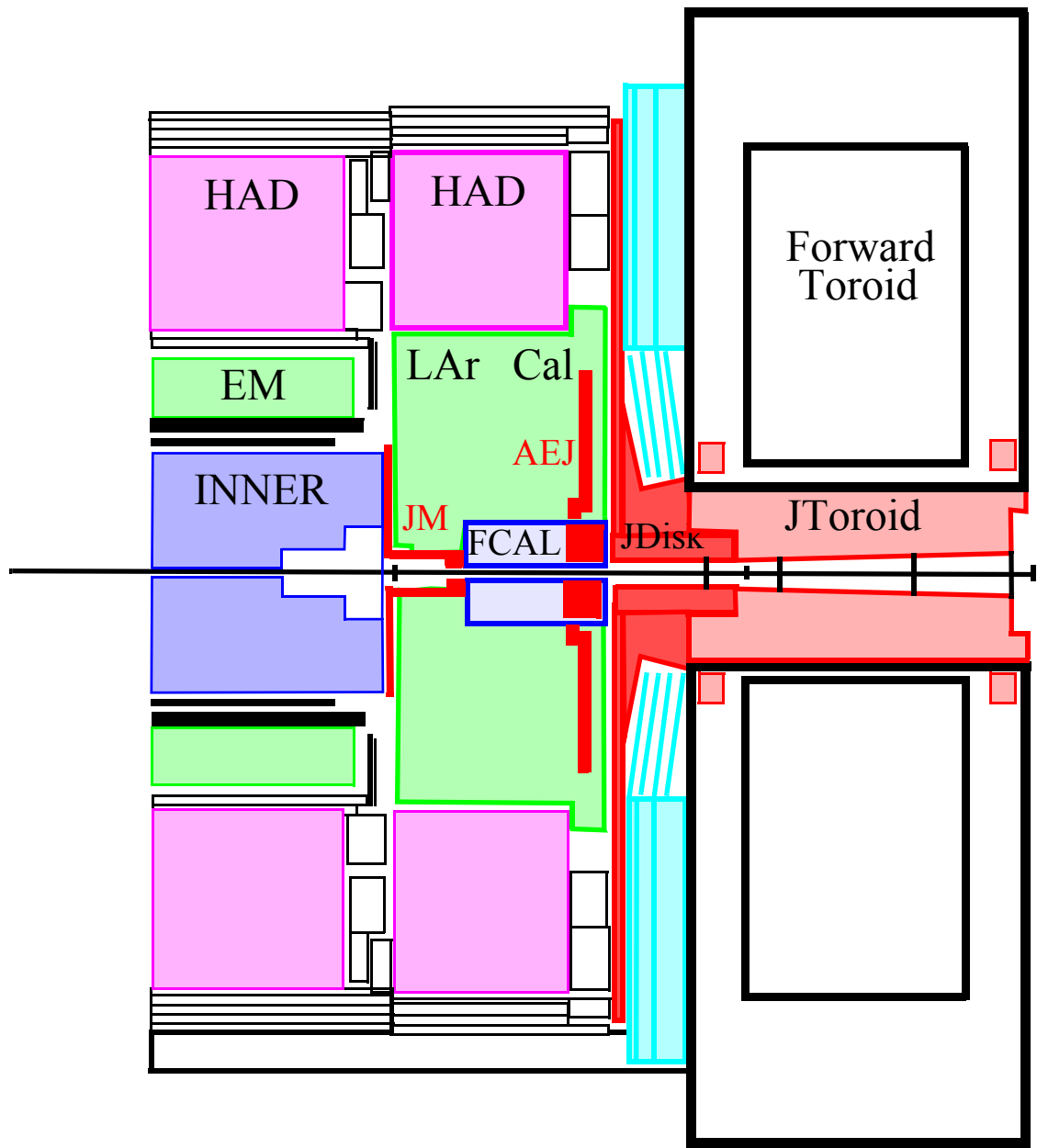


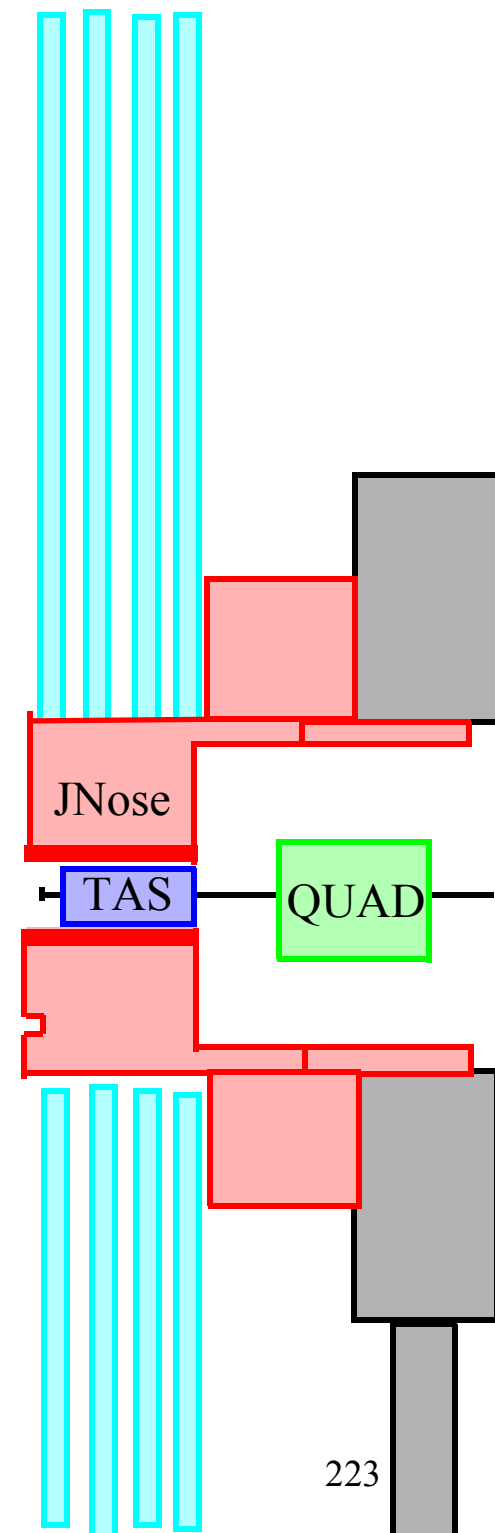
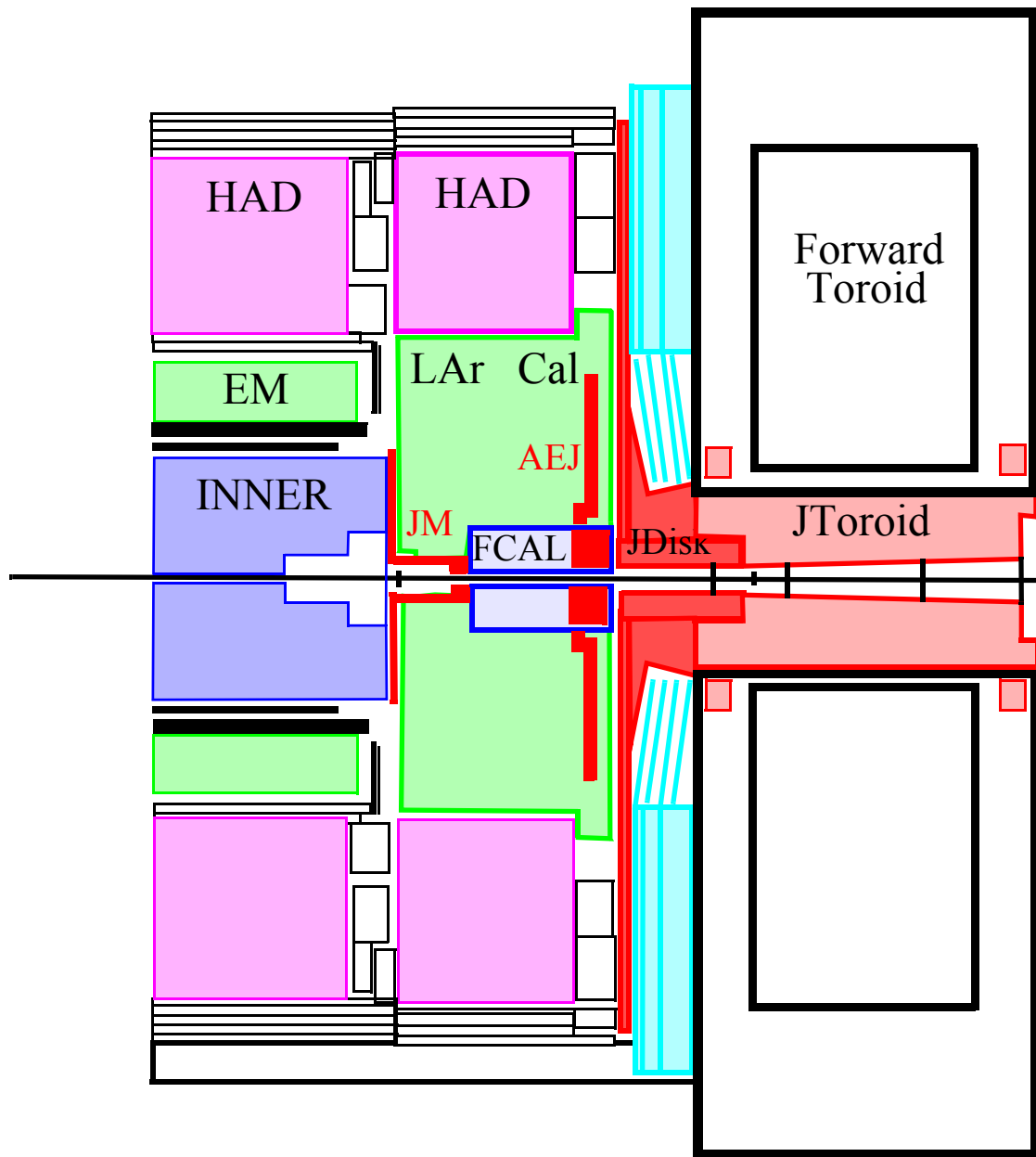




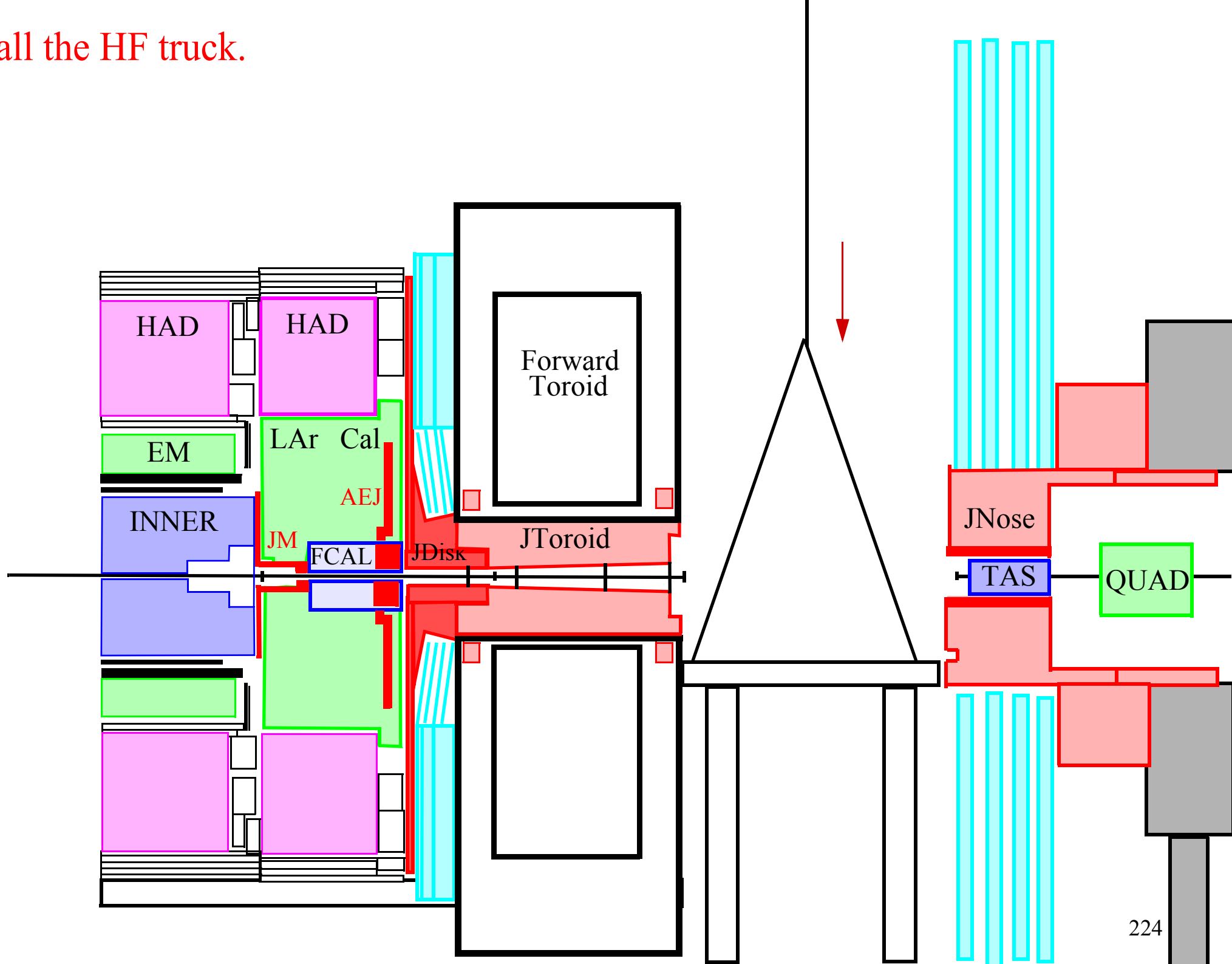
Move BW to parking position

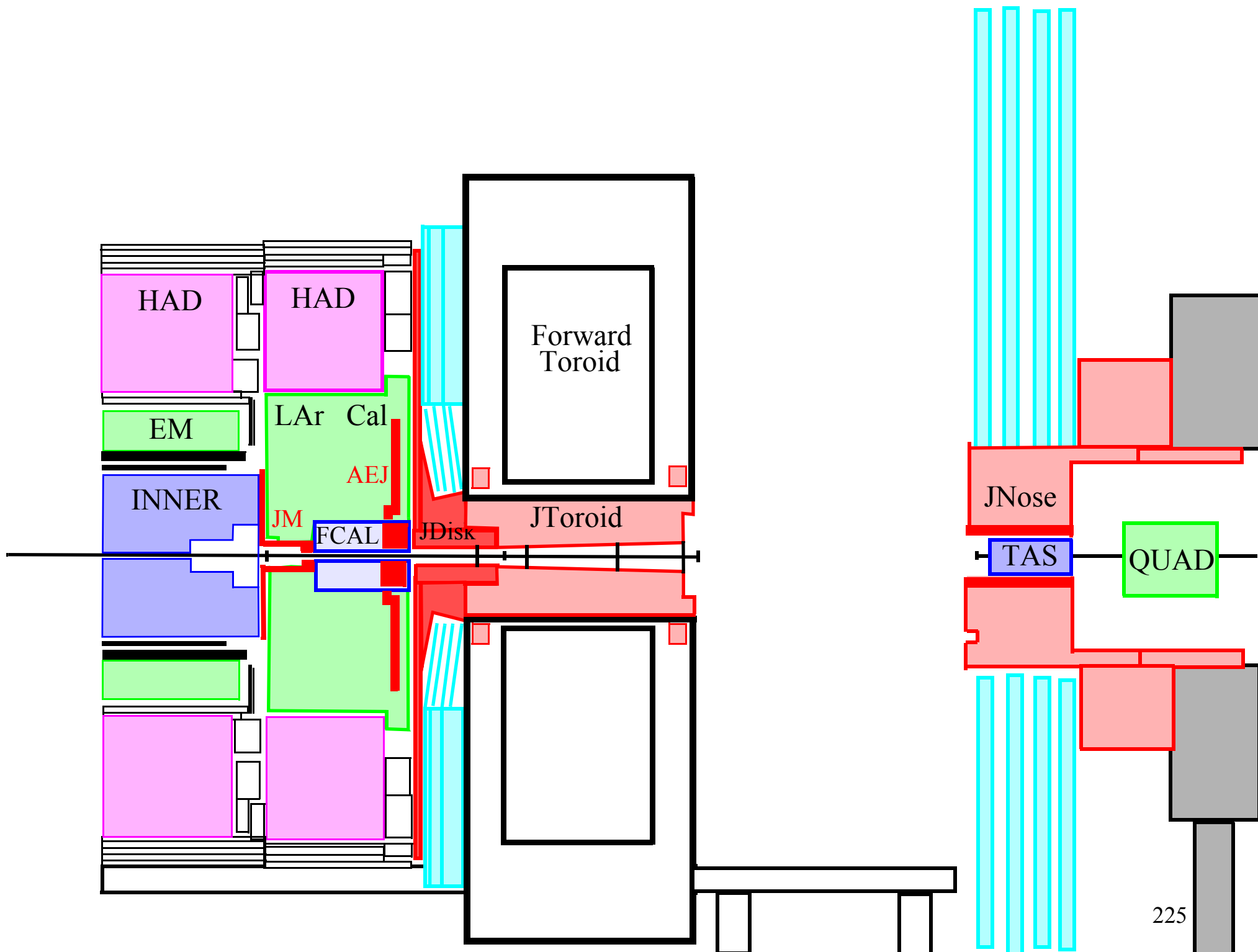




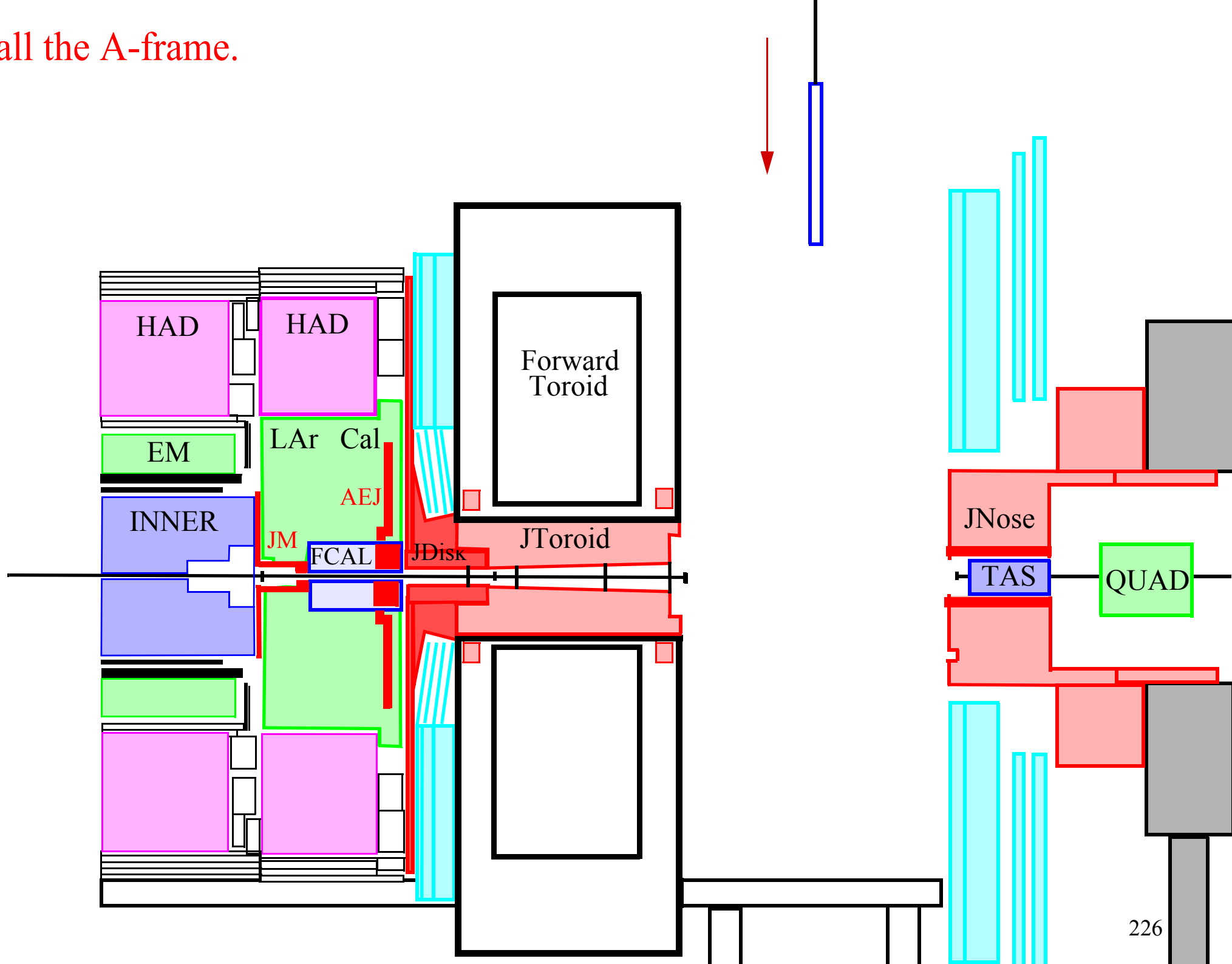


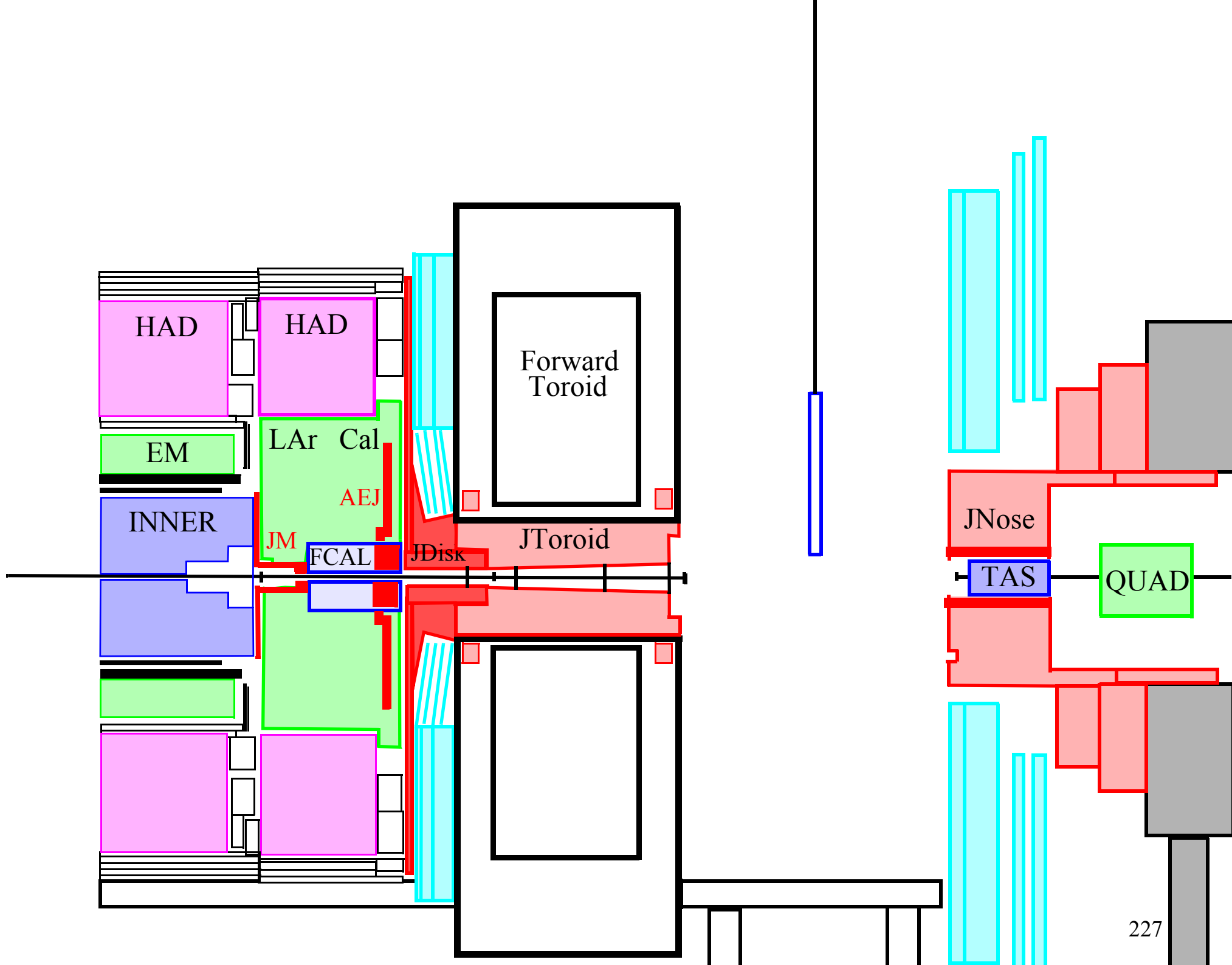
Install the HF truck.

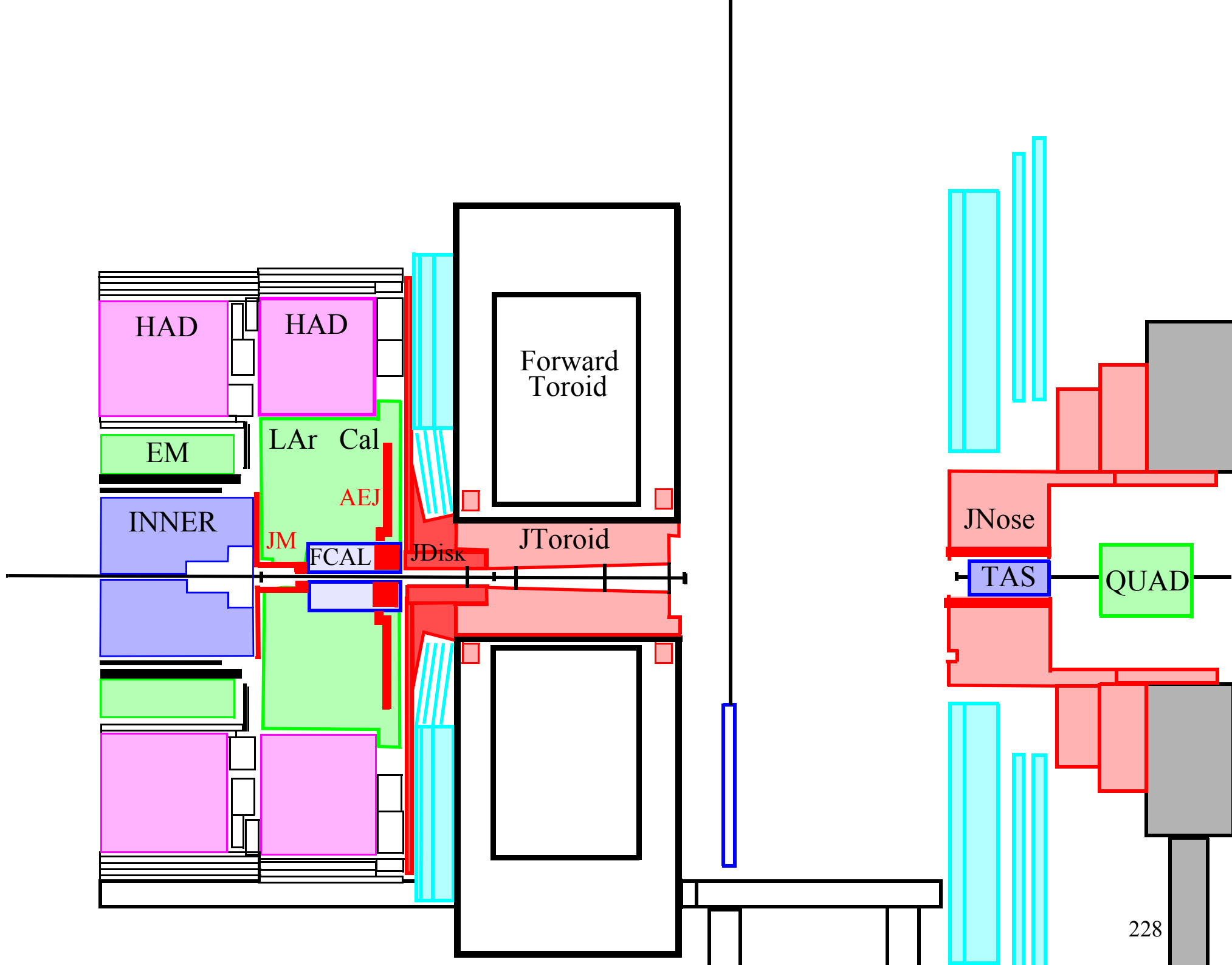


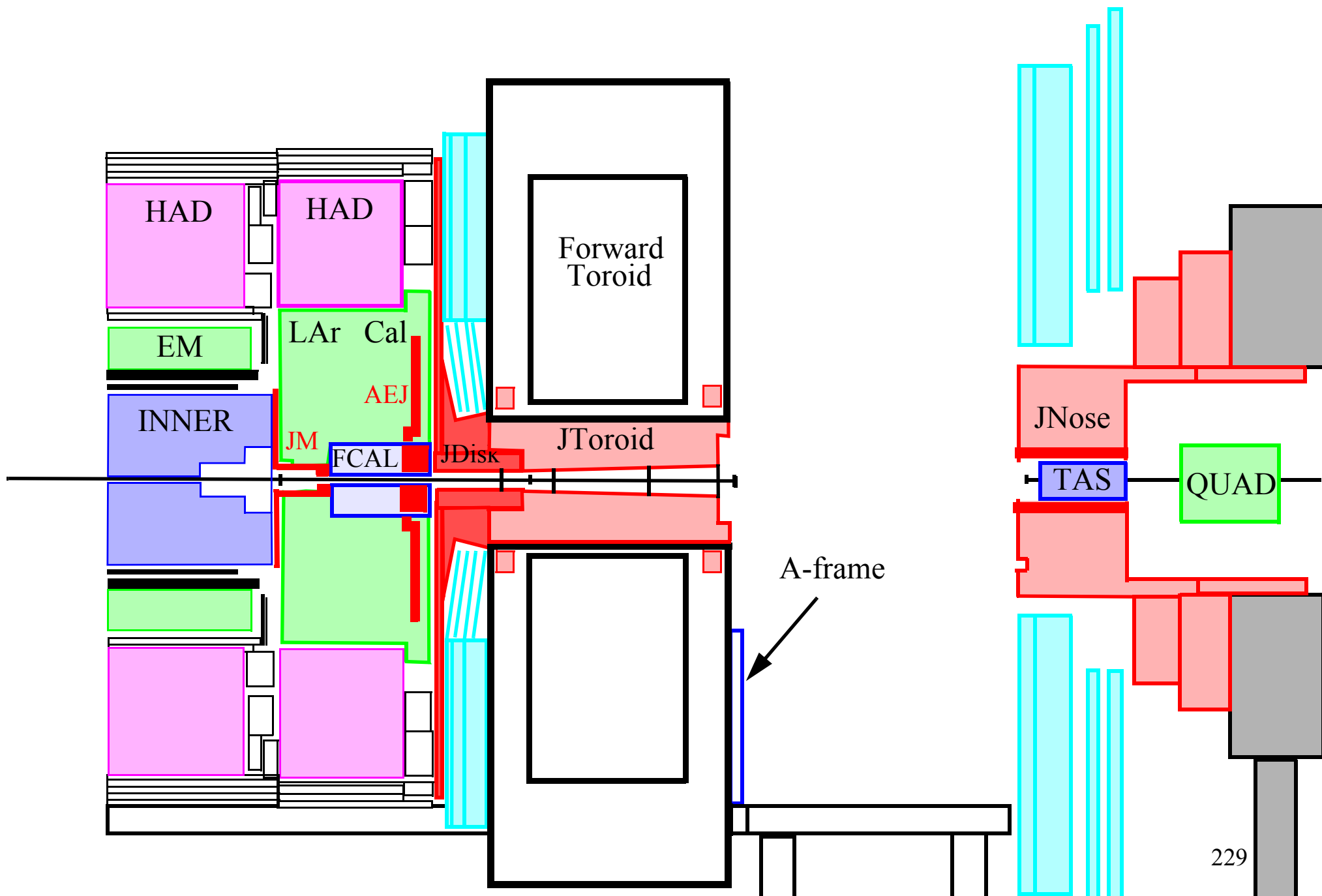


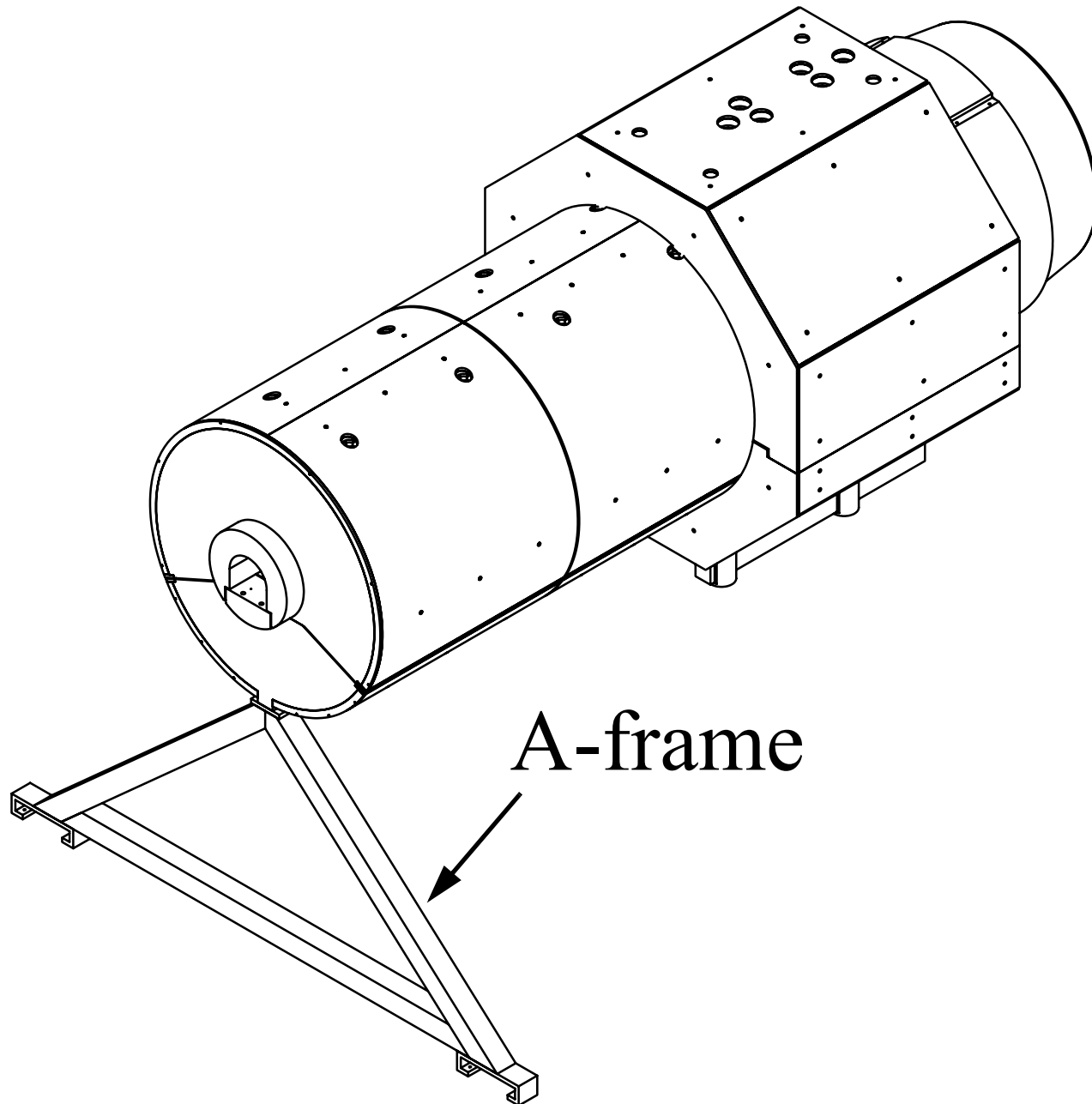
Install the A-frame.





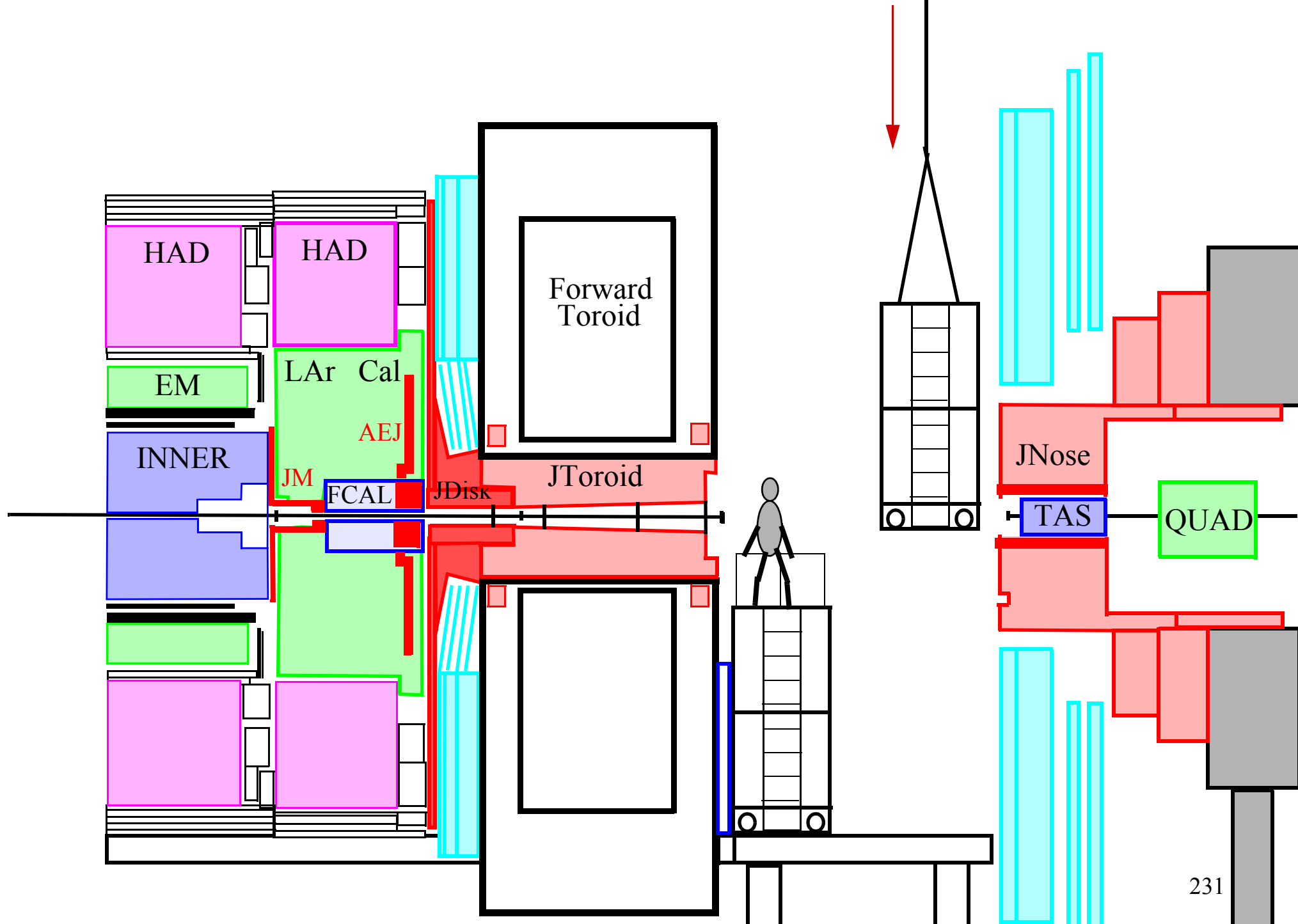


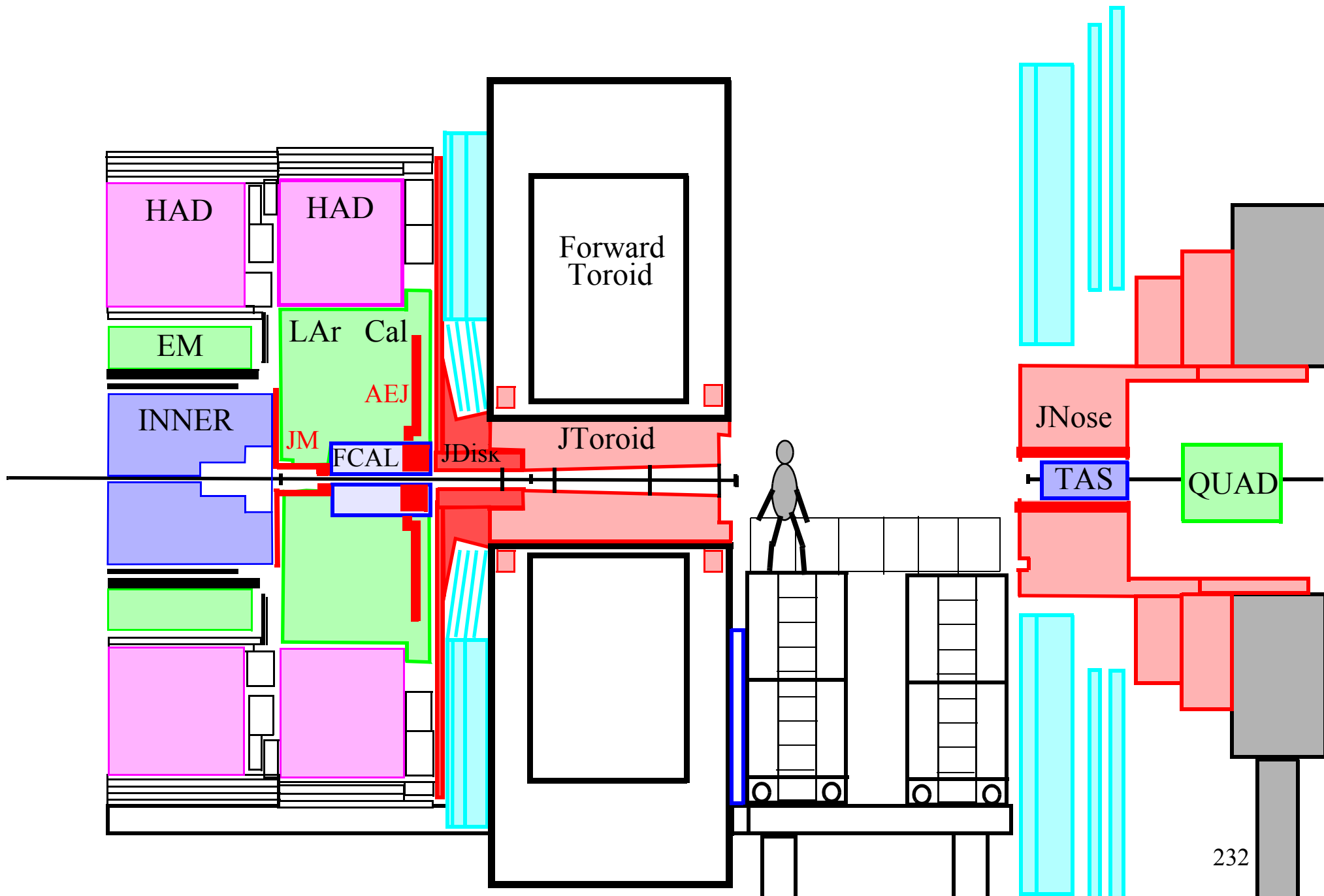




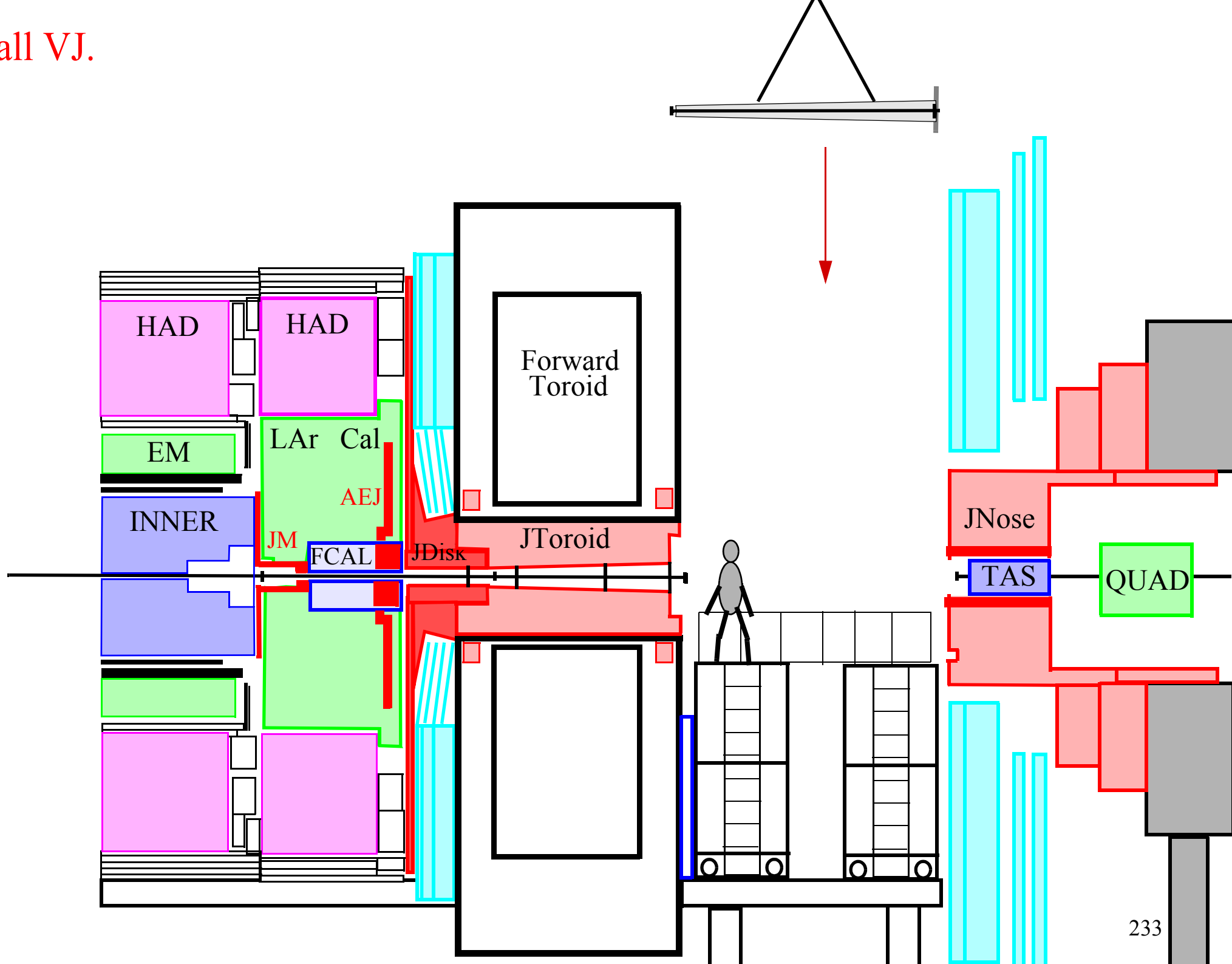
A-frame

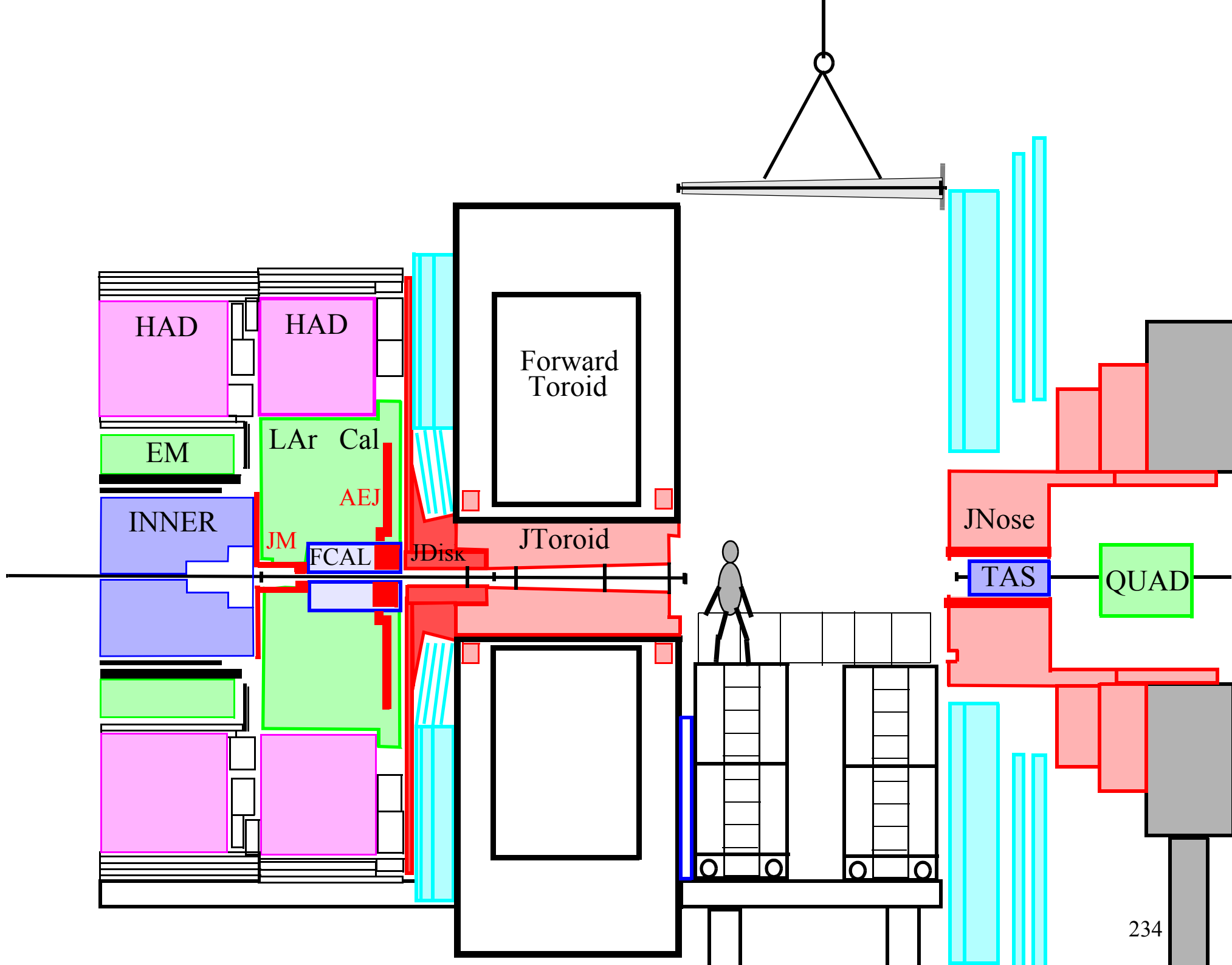
Install minivans.





Install VJ.





HAD

HAD

Forward
Toroid

EM

LAr Cal

INNER

AEJ

JM

FCAL

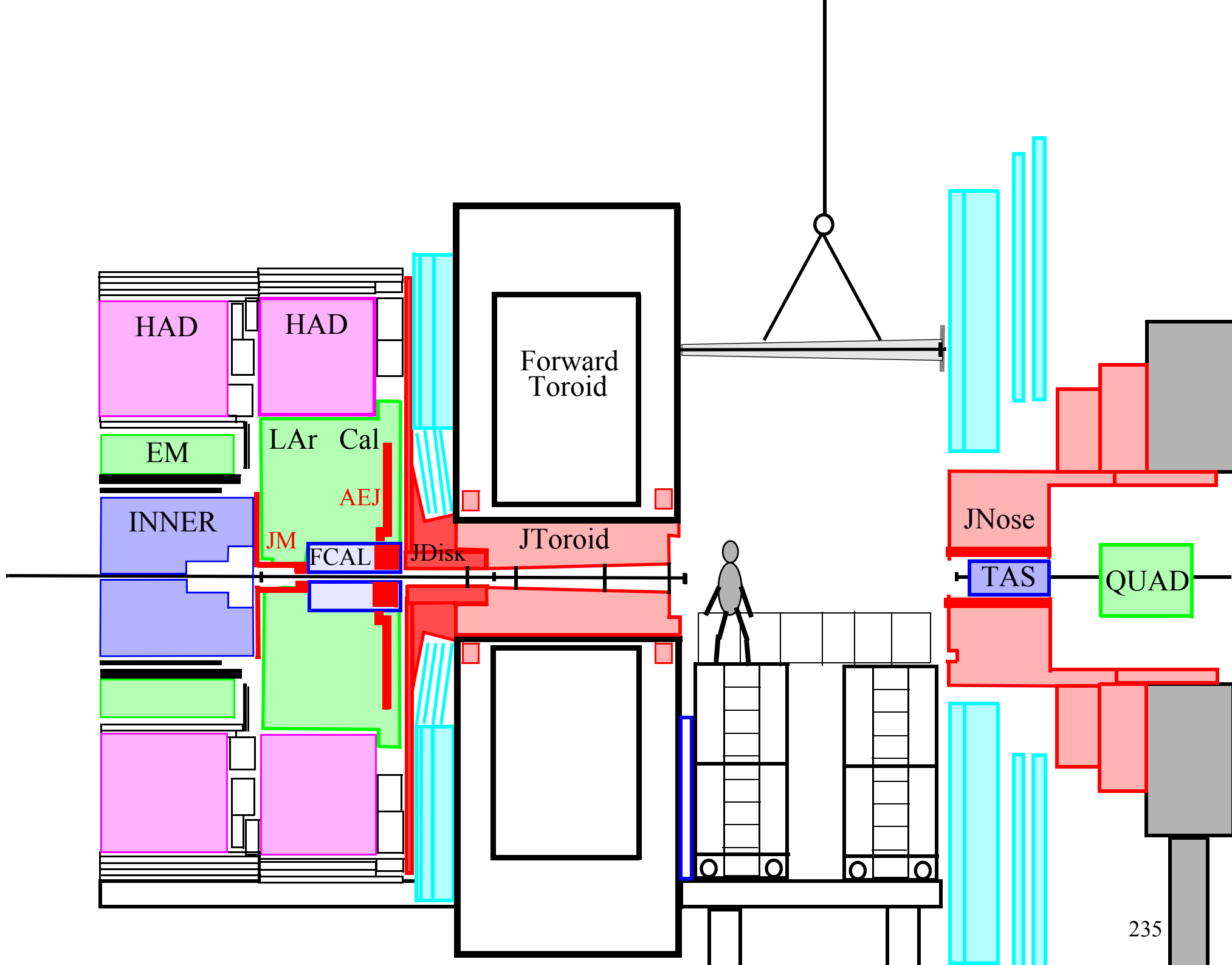
JDisk

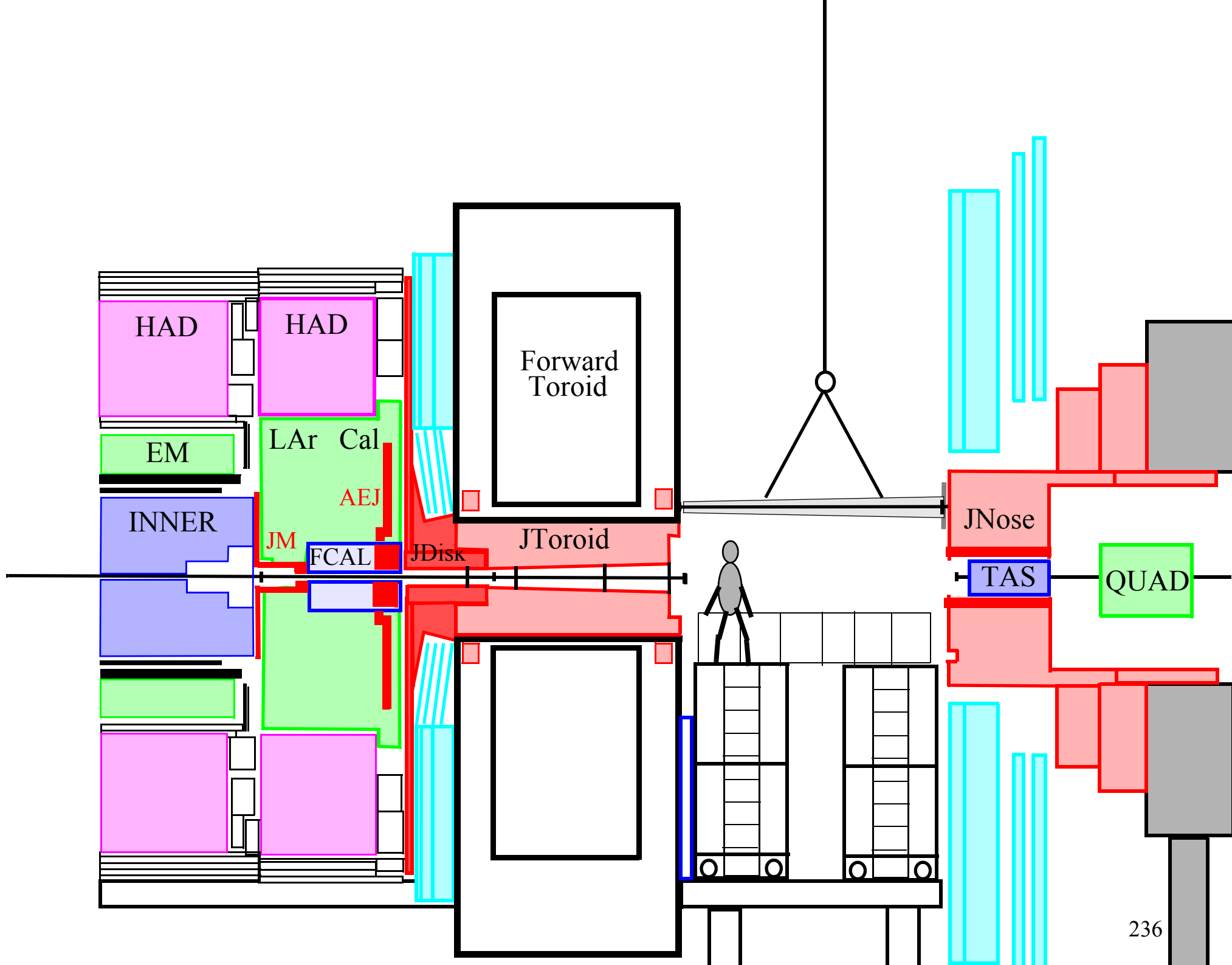
JToroid

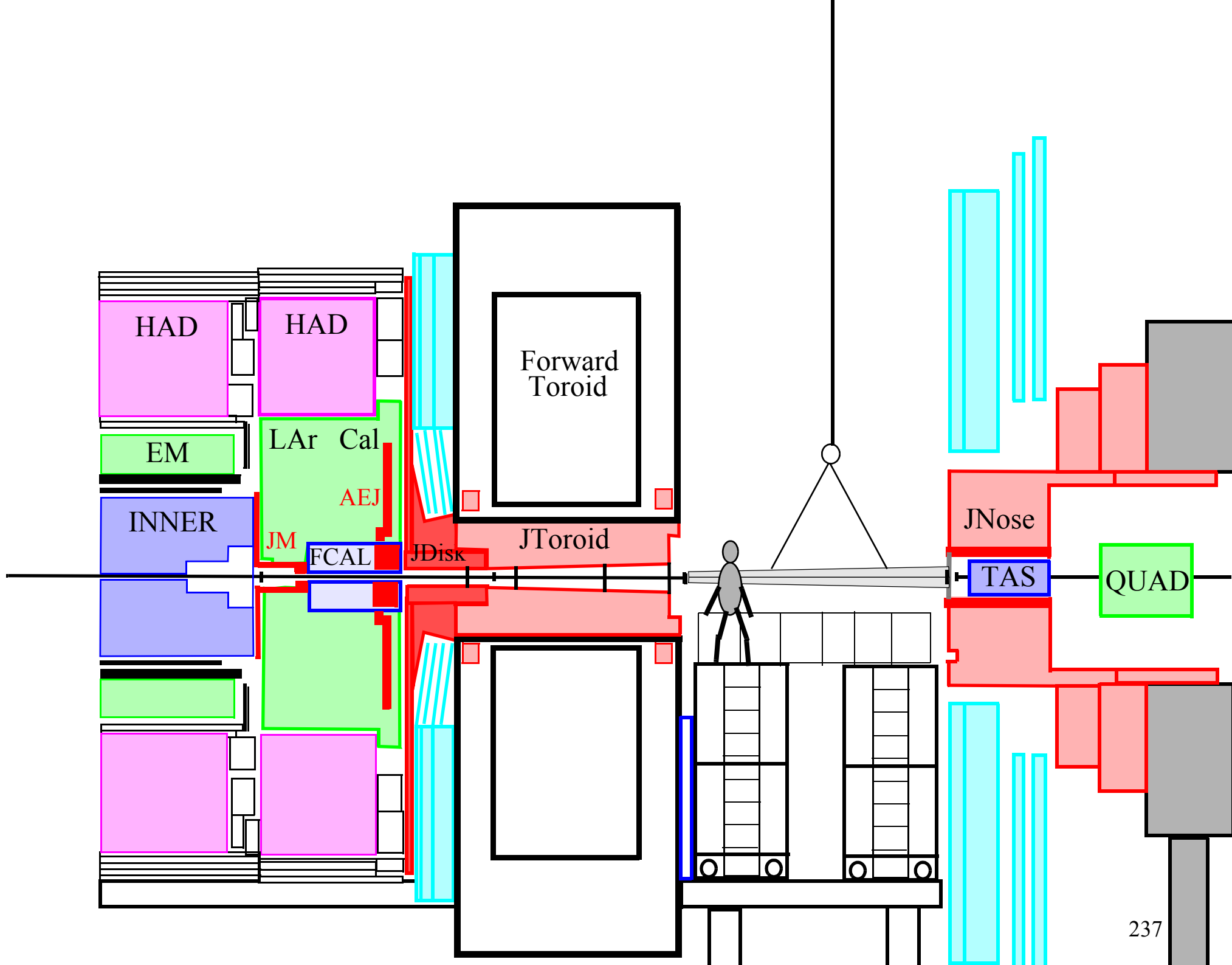
JNose

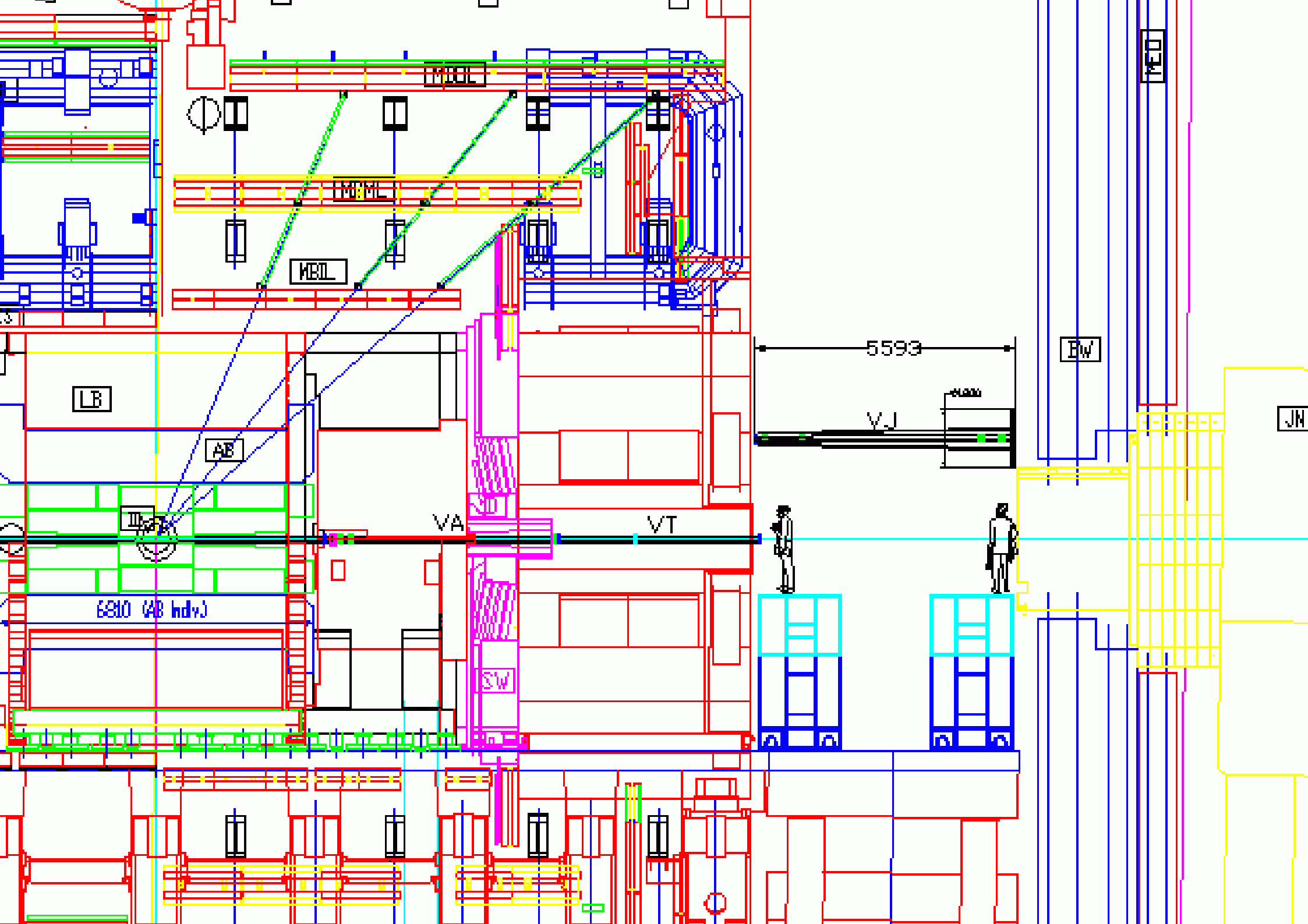
TAS

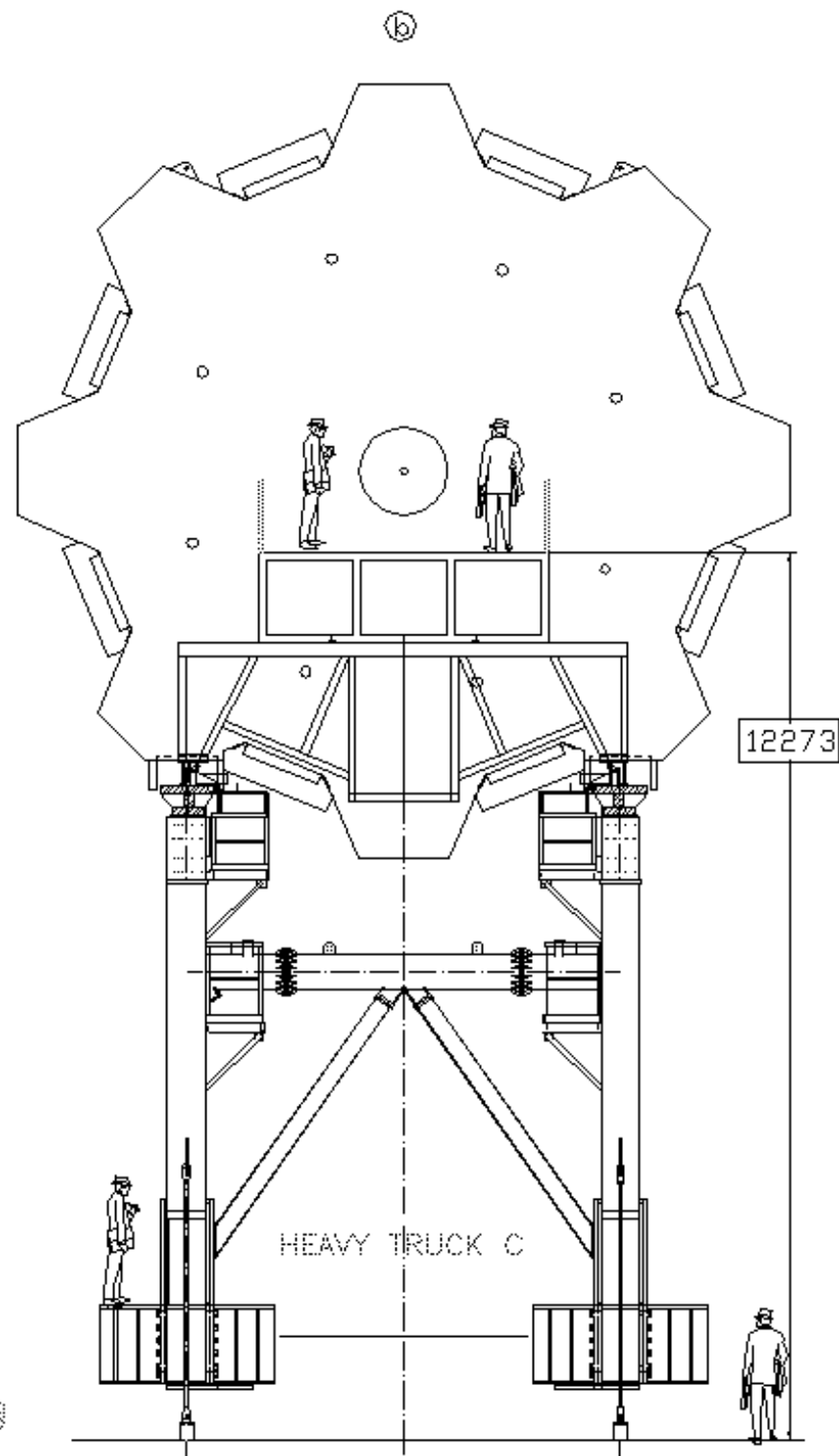
QUAD

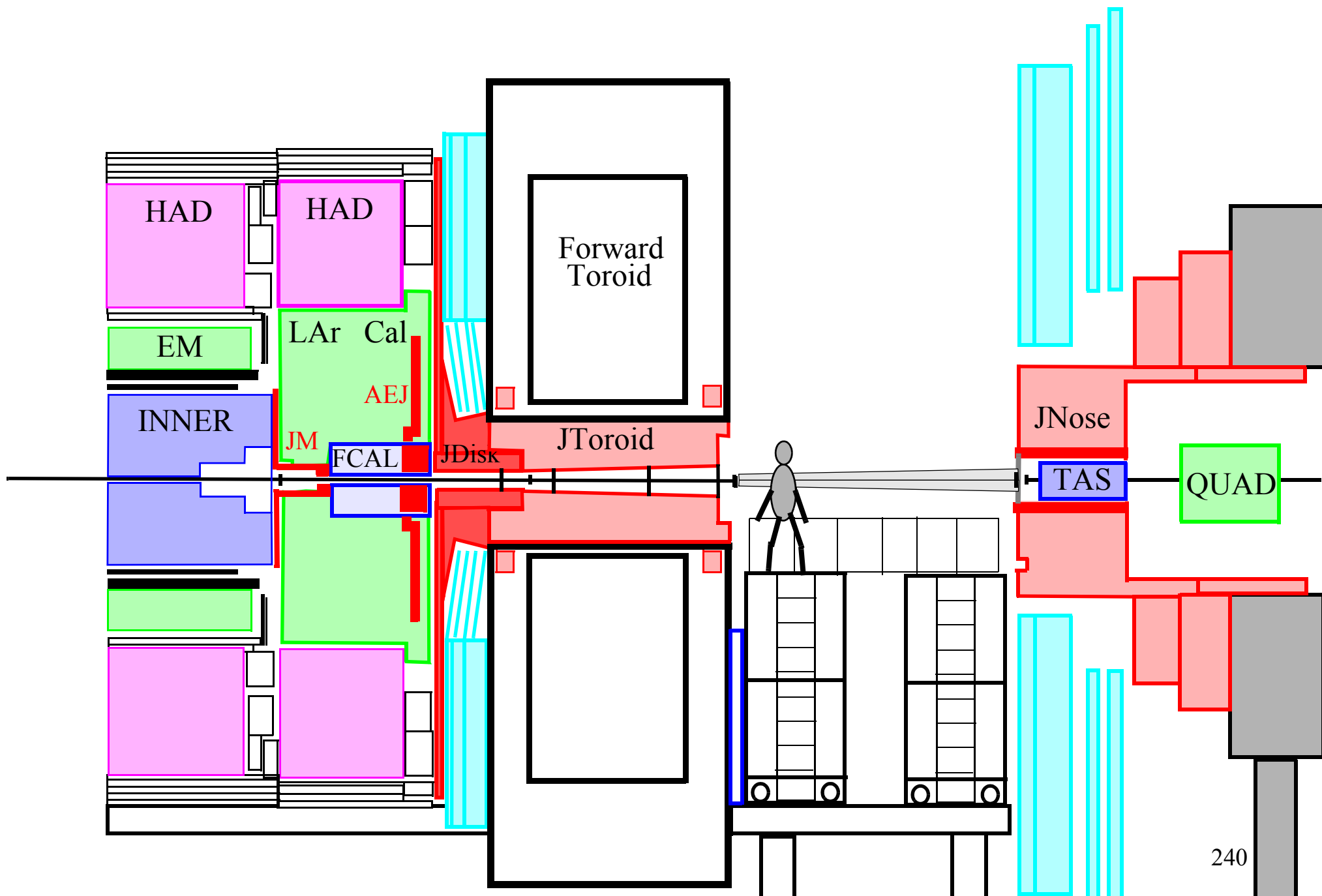


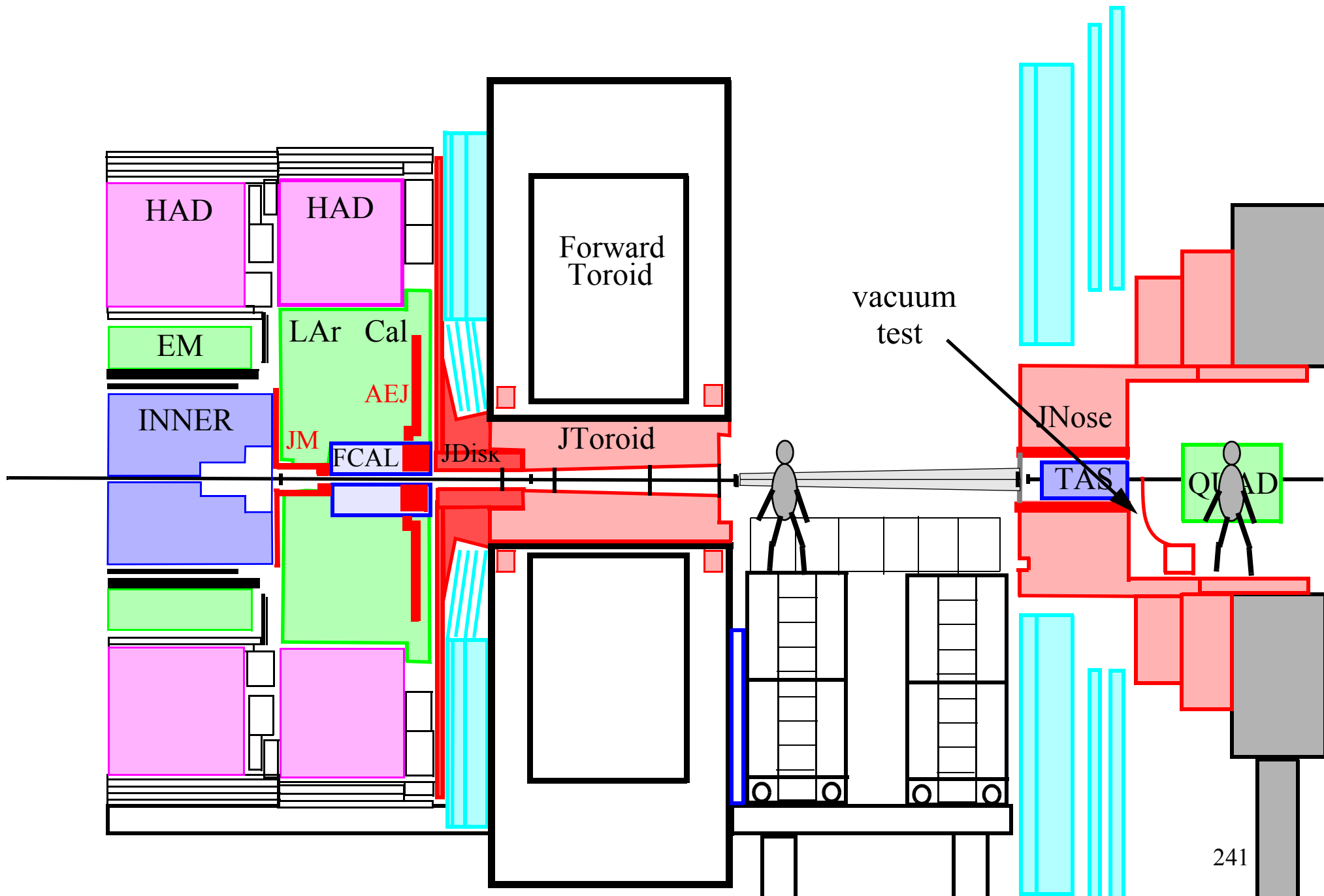




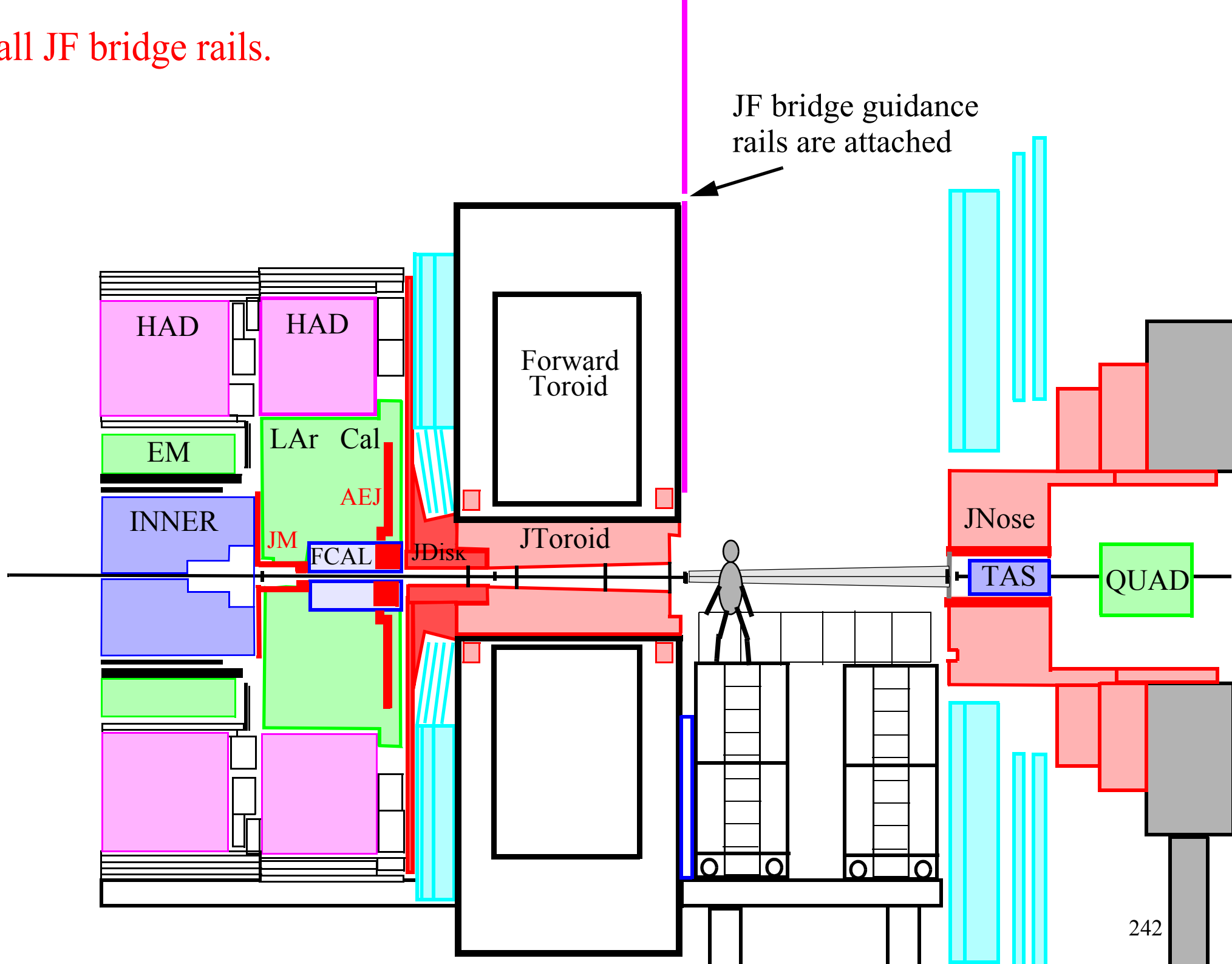






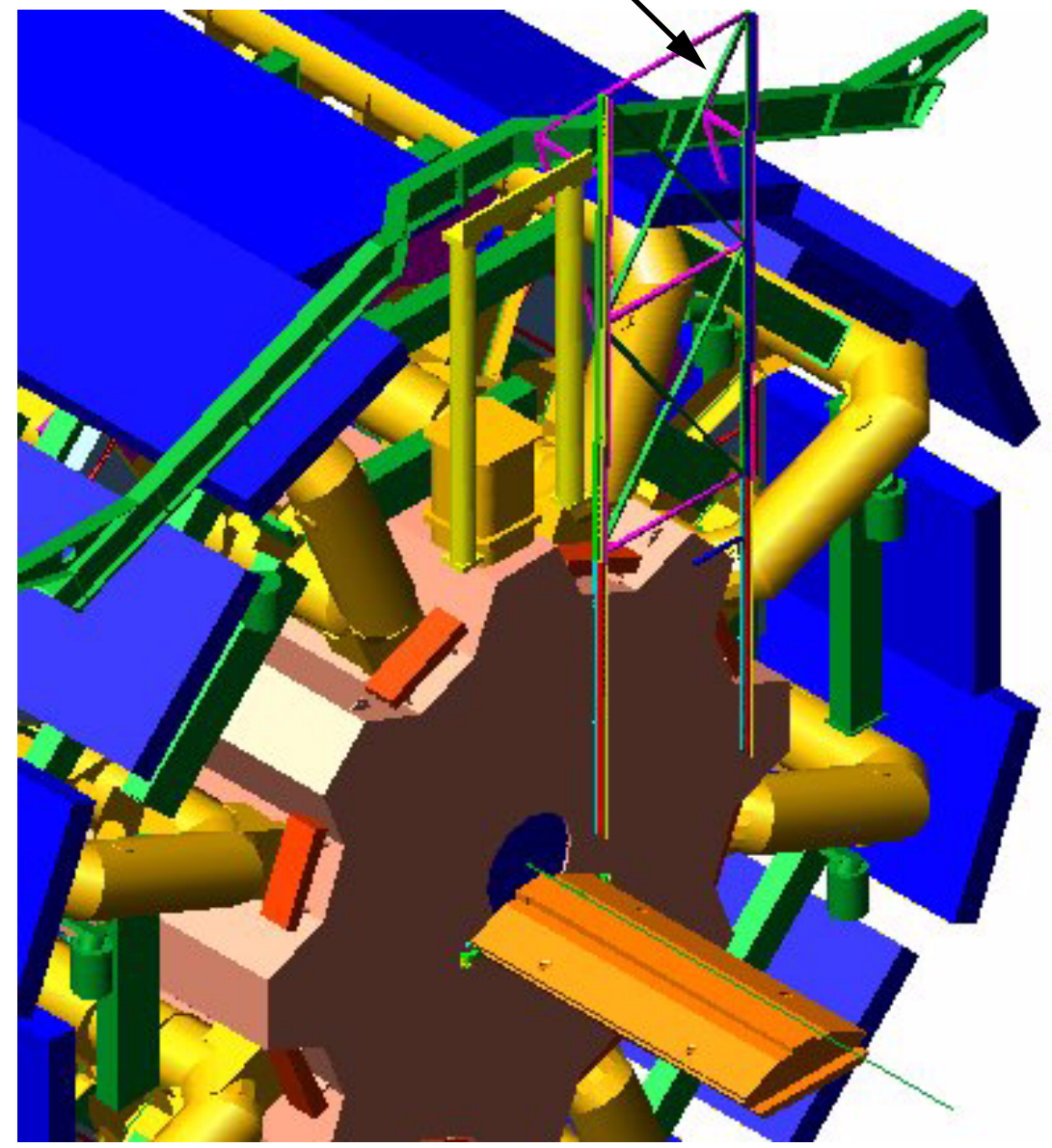
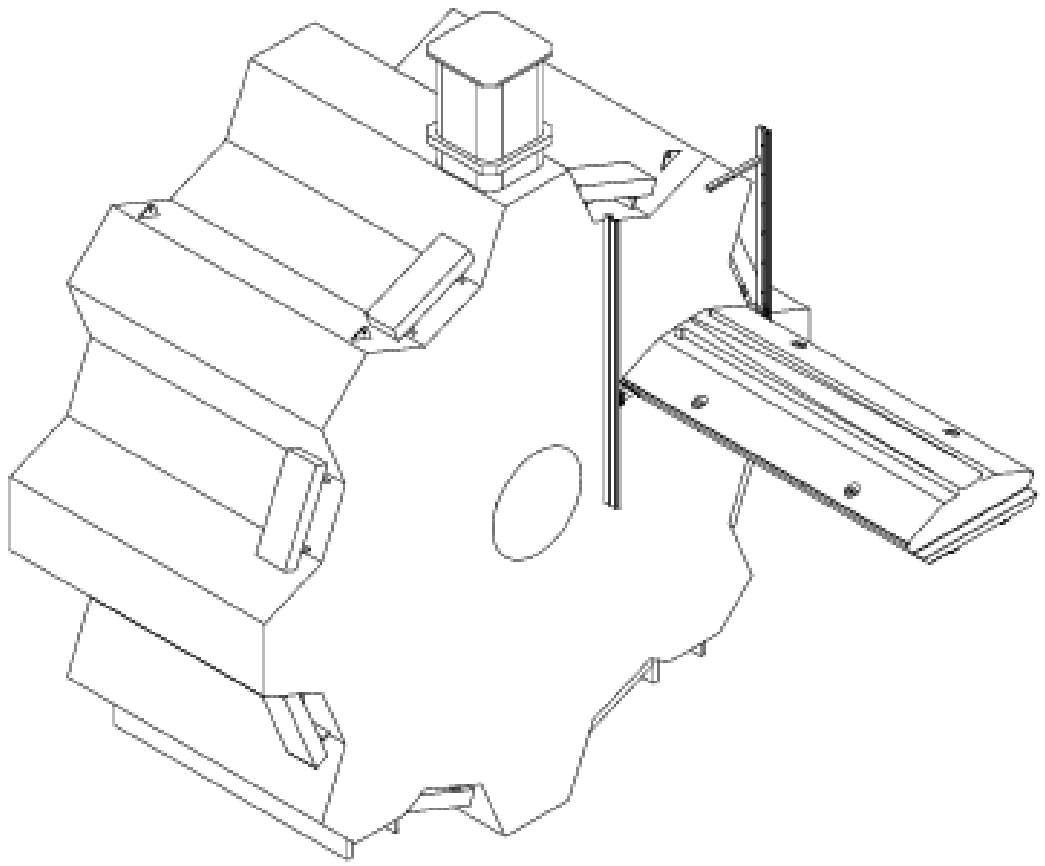


Install JF bridge rails.

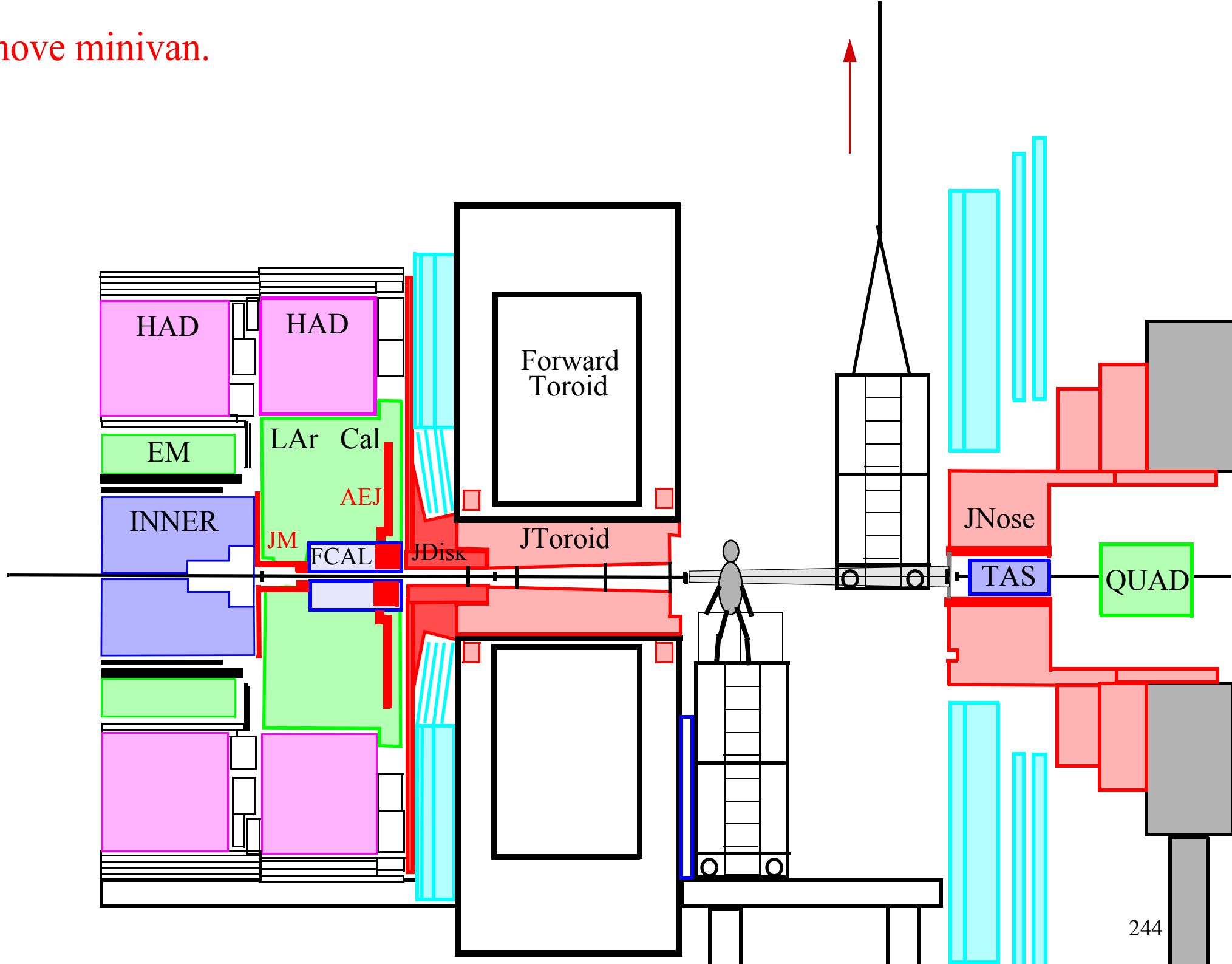


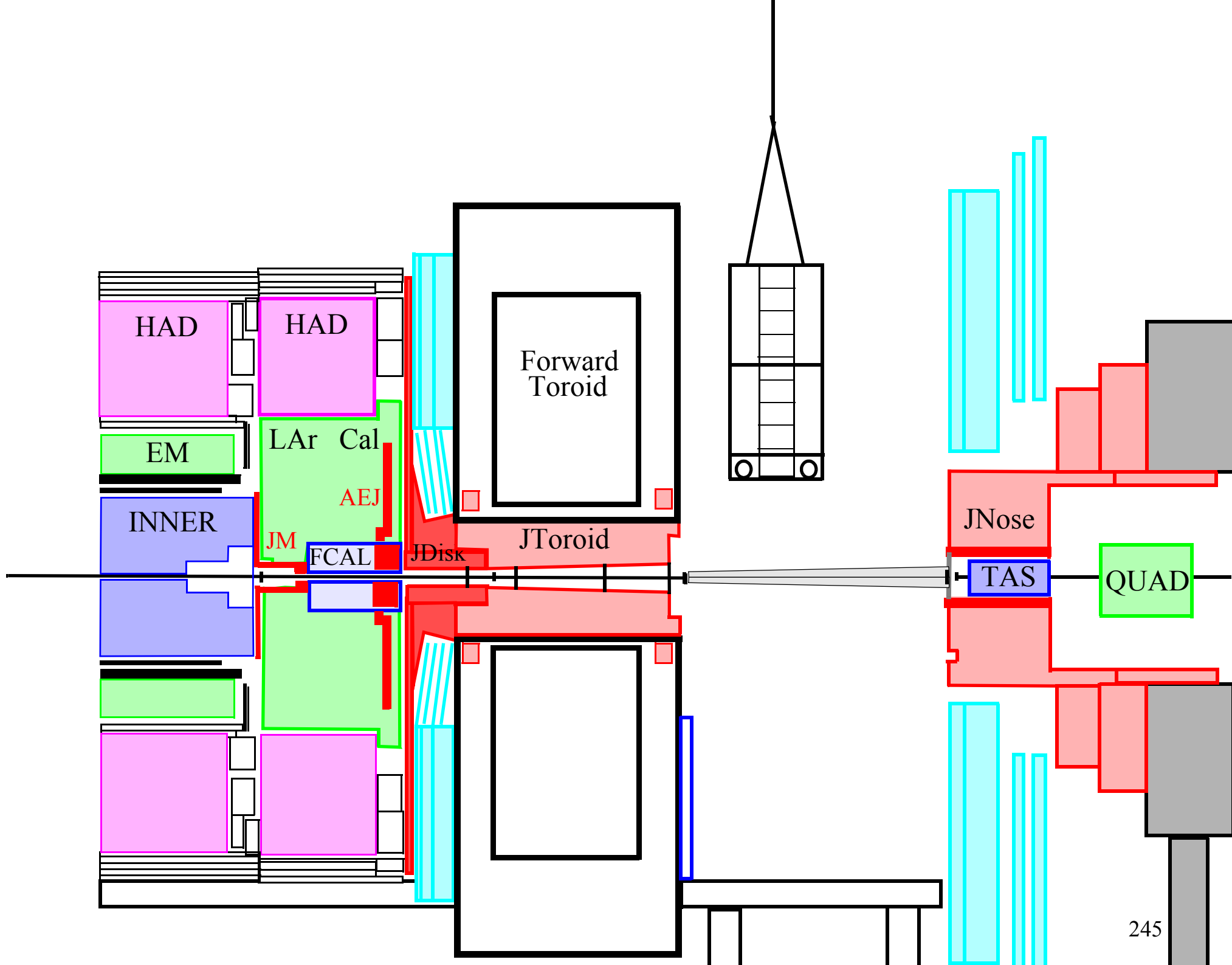
JF bridge guidance rails are attached

JF bridge guidance rails are attached to the rails above the toroid.

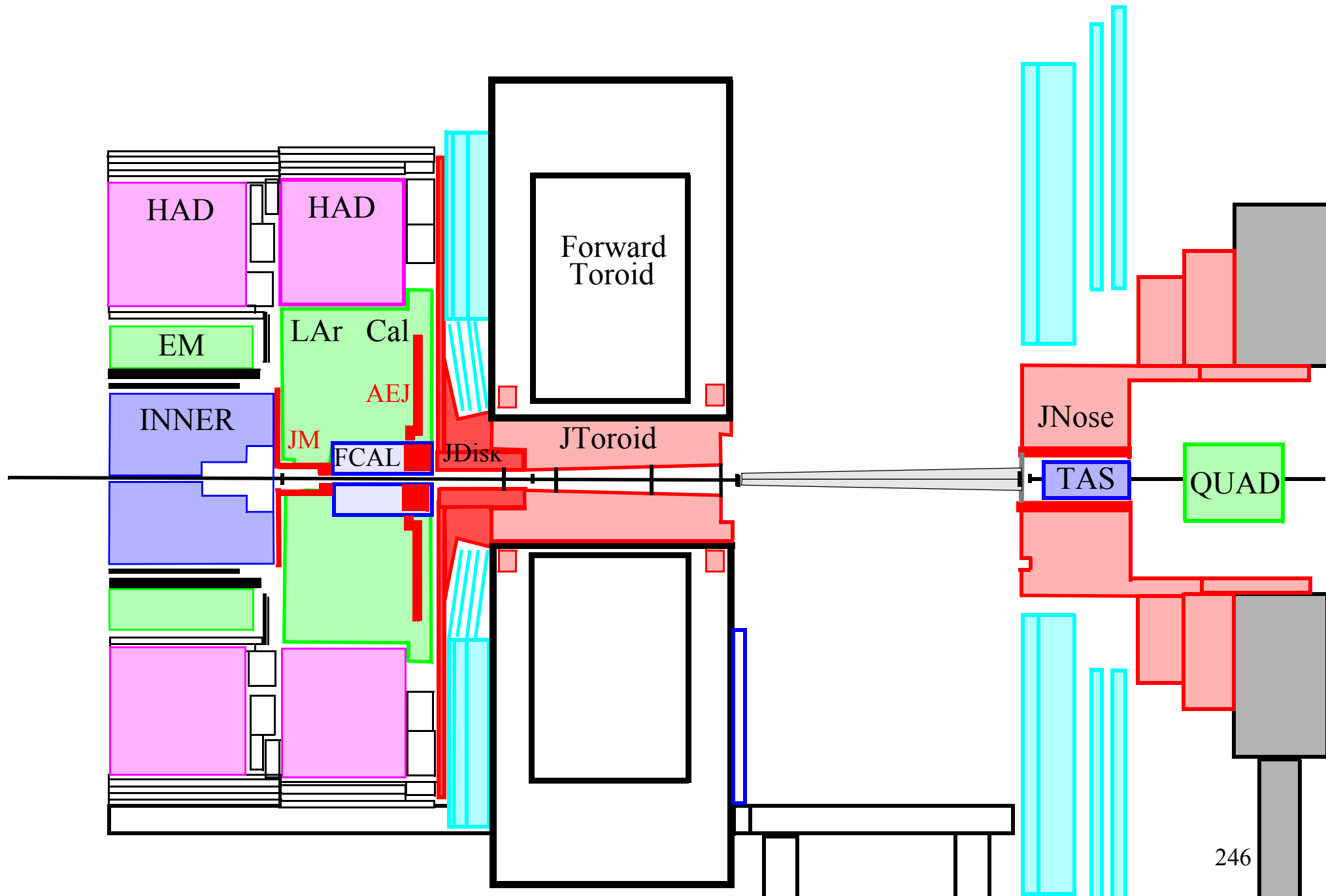


Remove minivan.

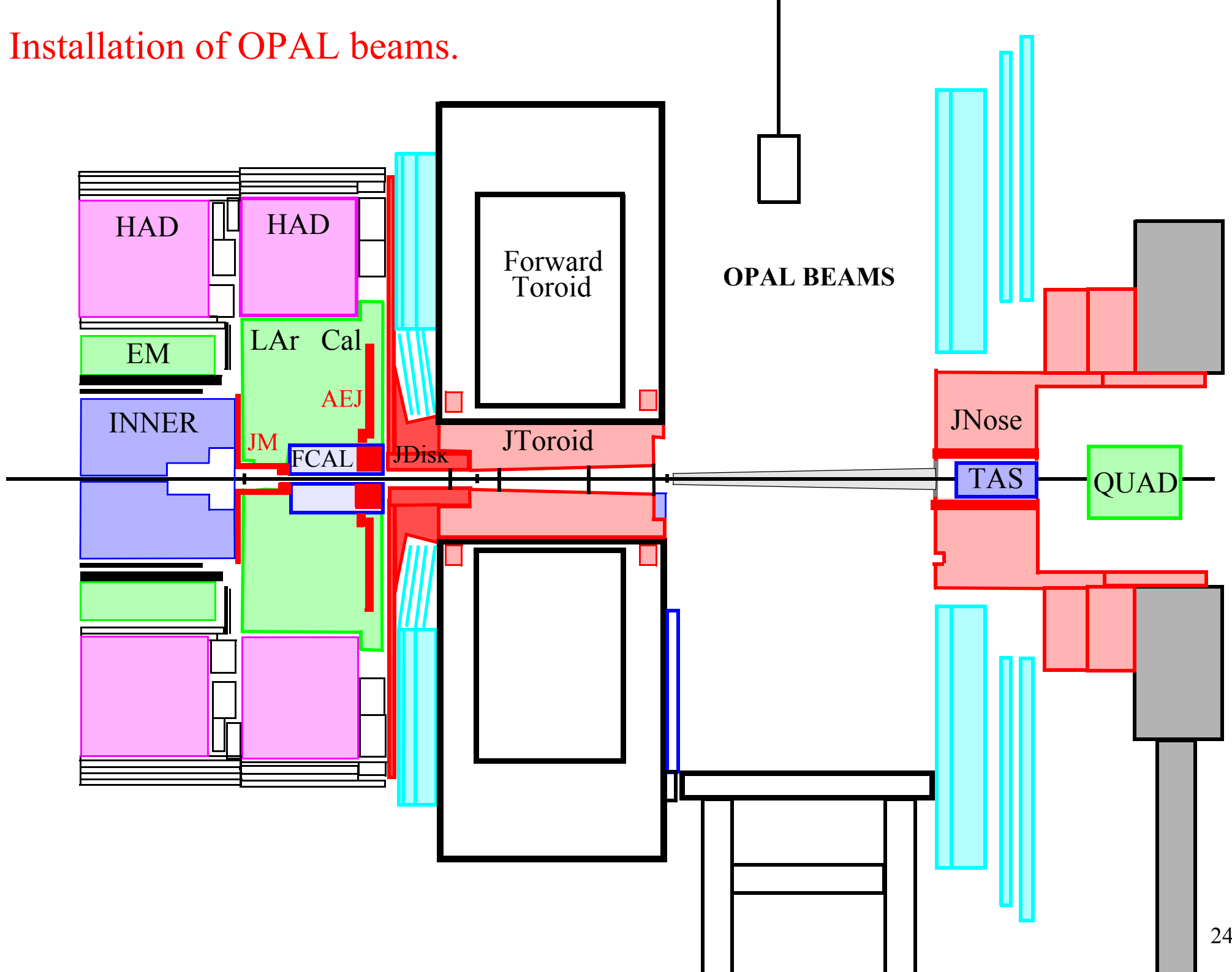


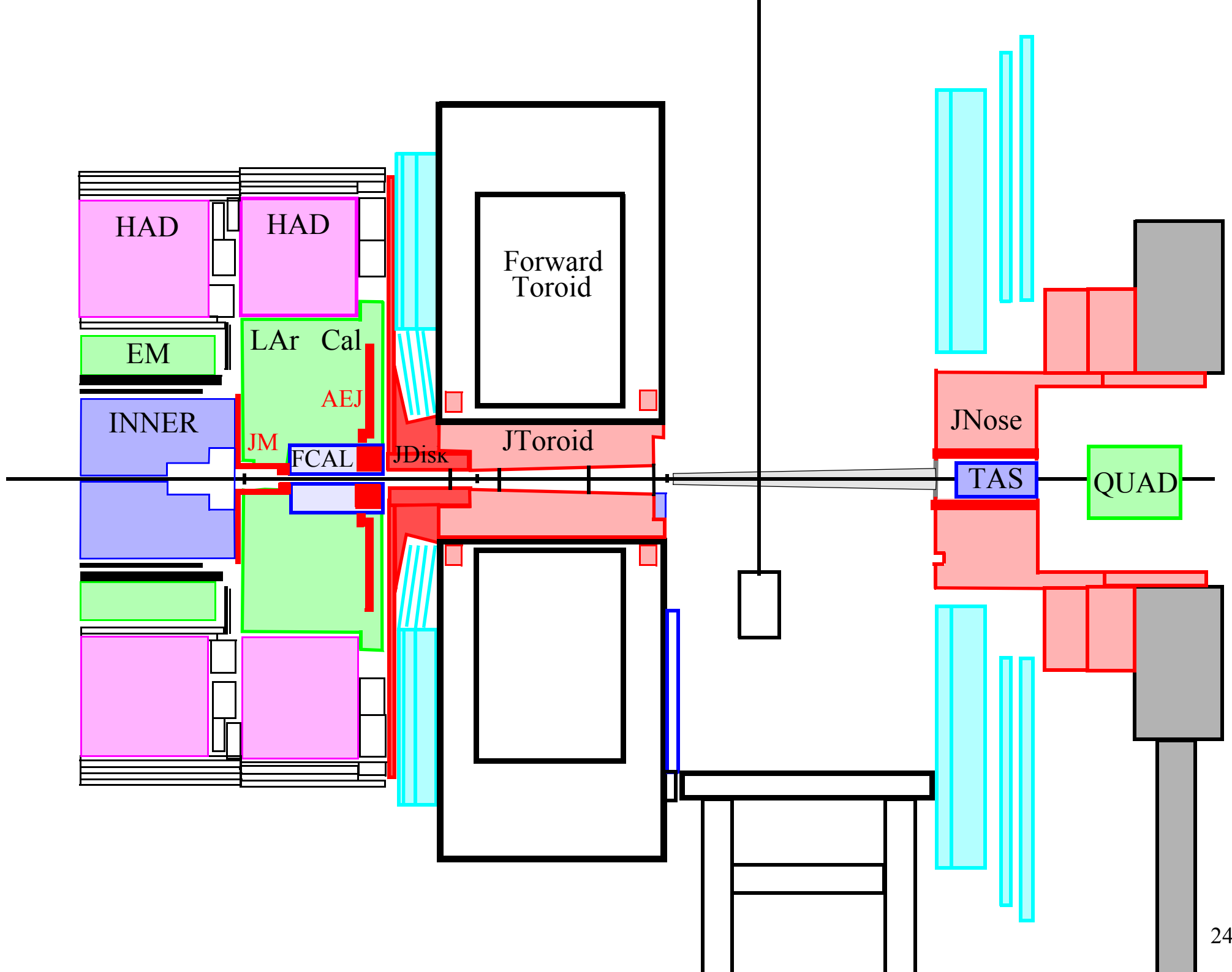


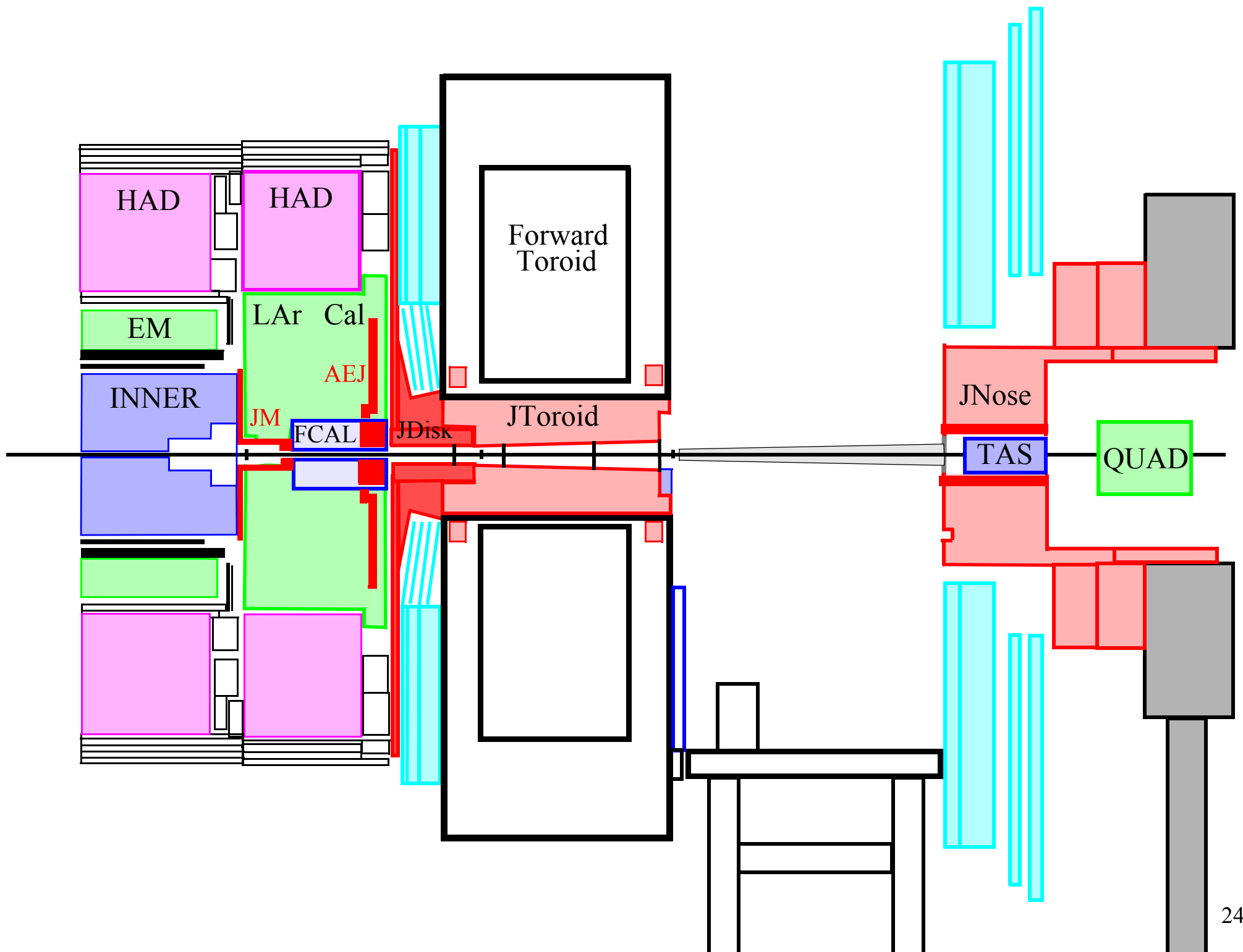
The HF truck is moved sideways so that it is not centered on the beamline.

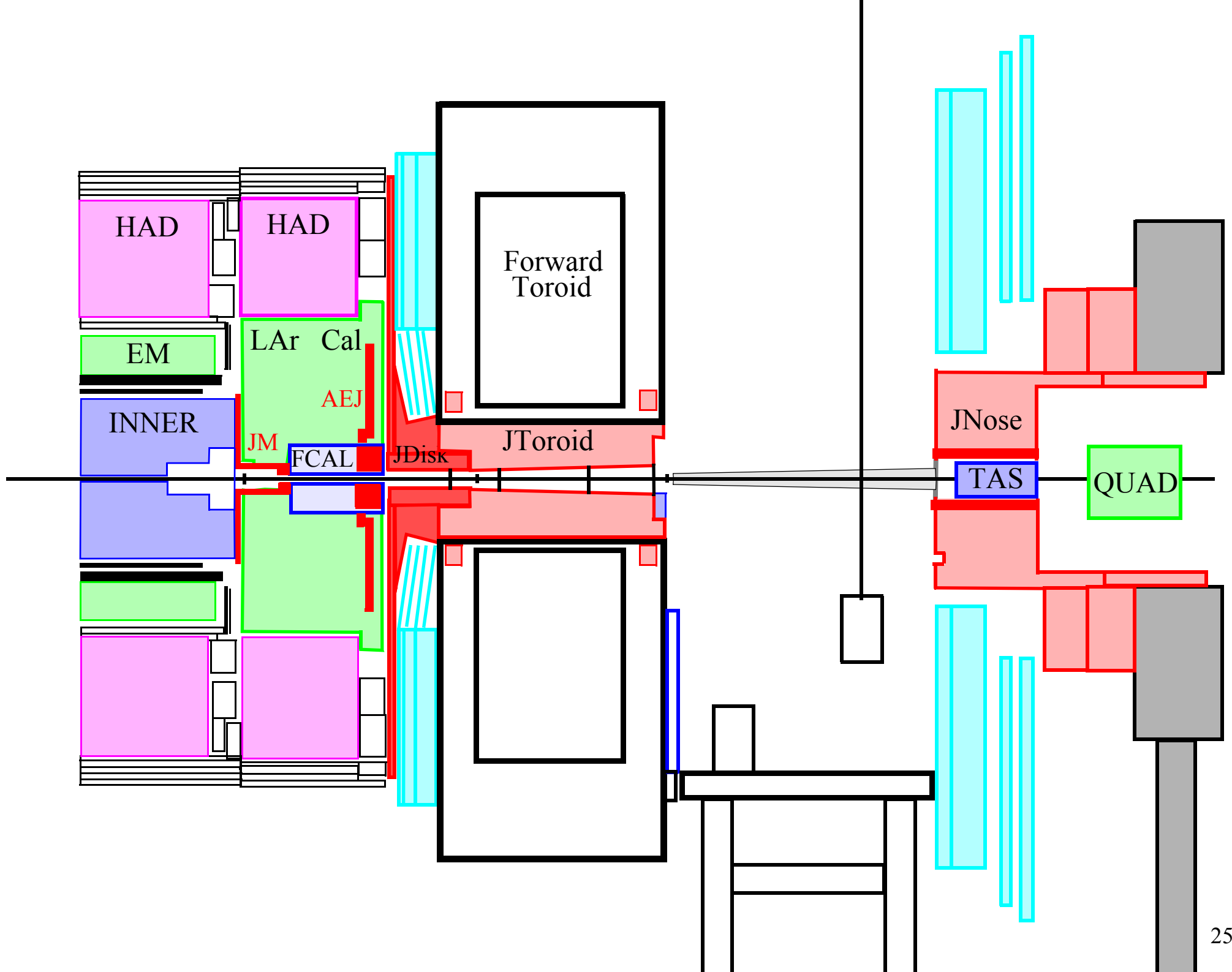


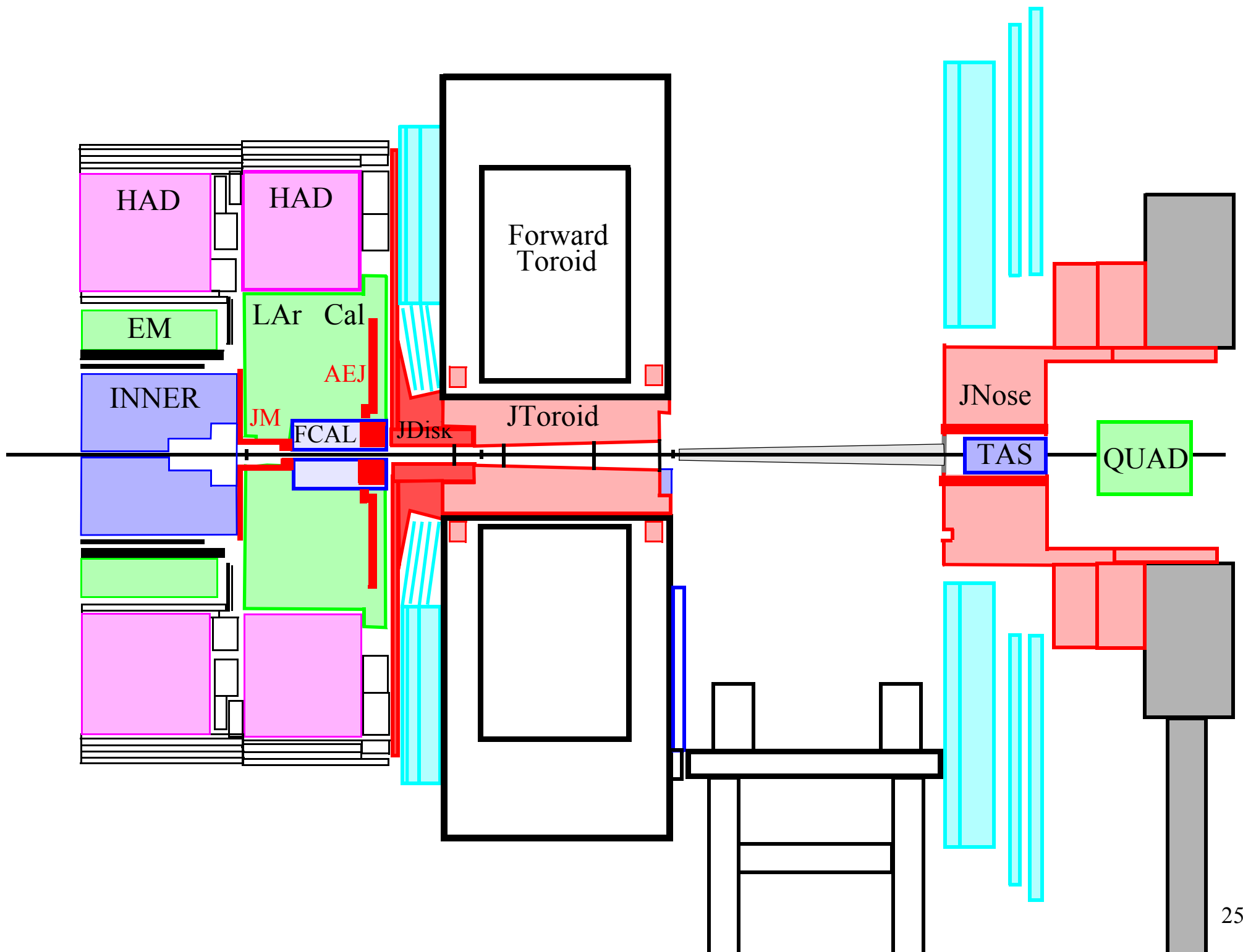
Installation of OPAL beams.



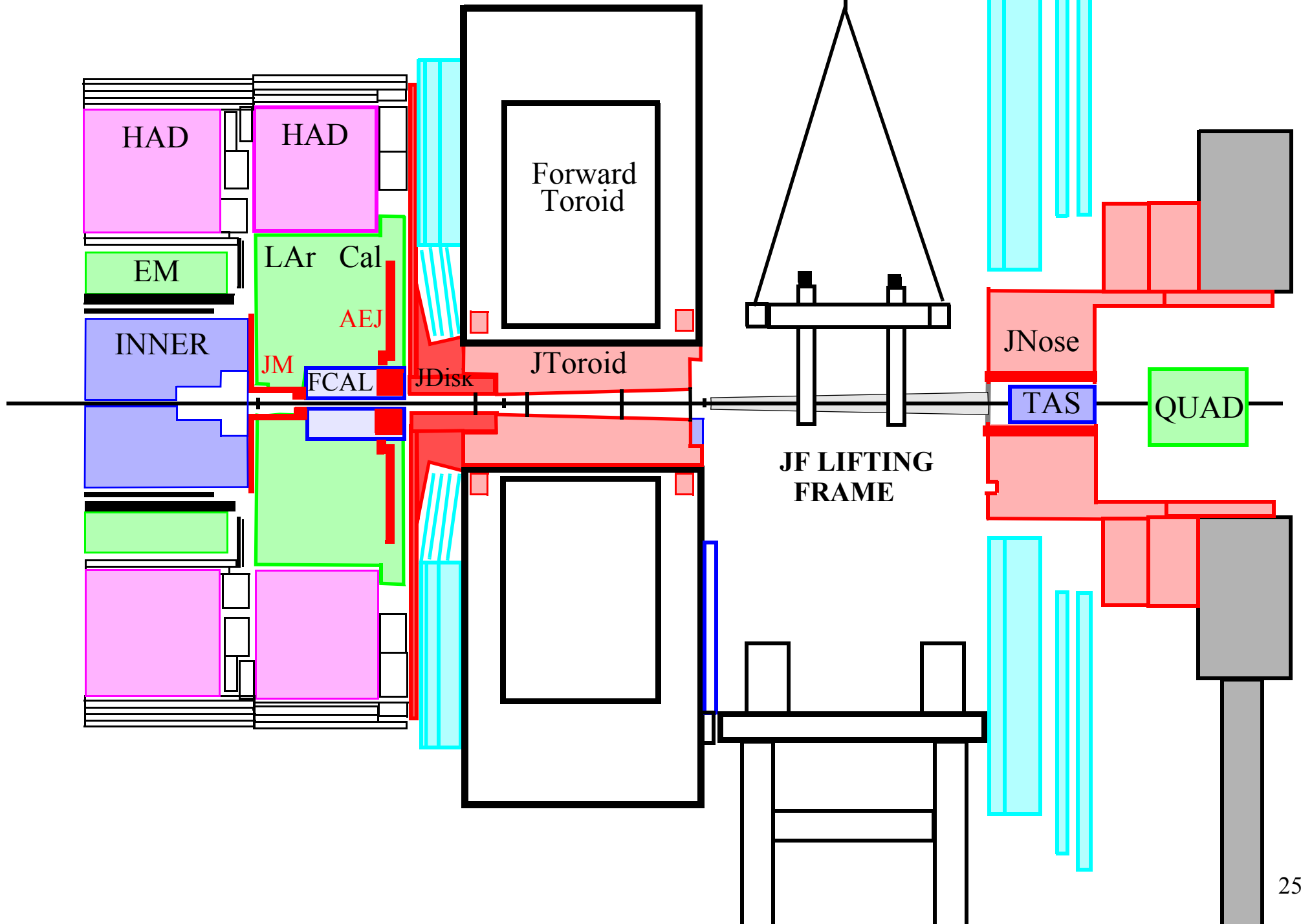


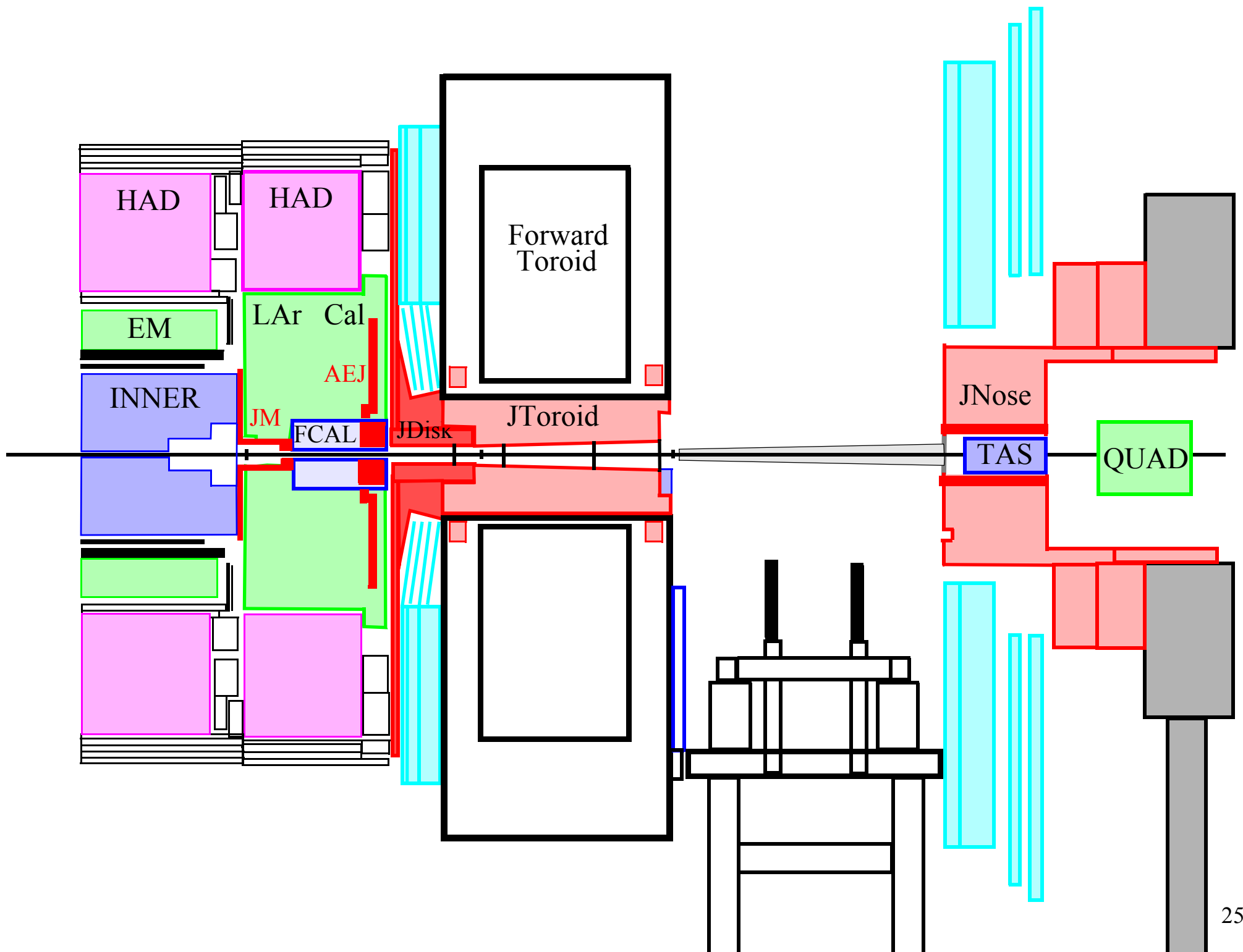




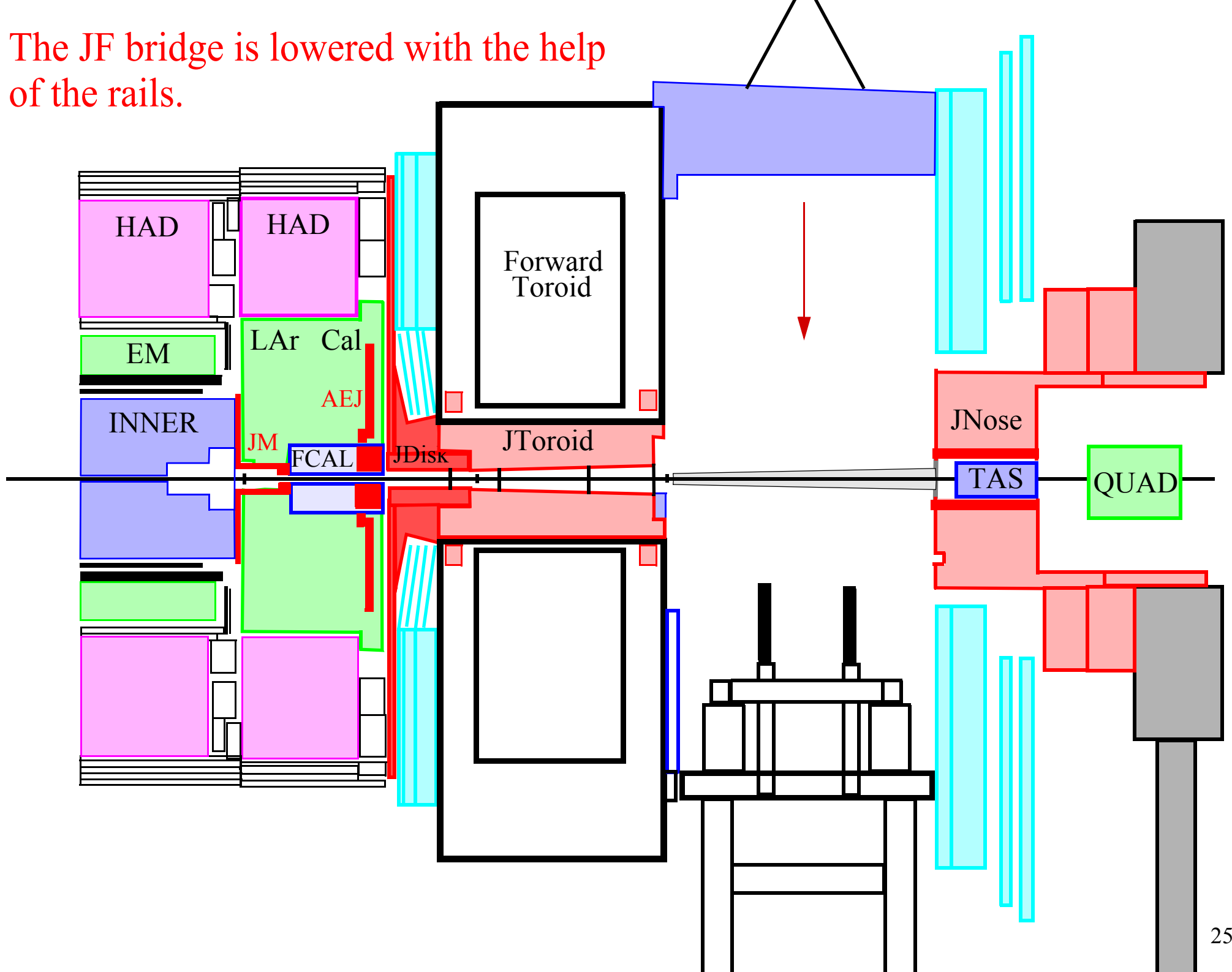


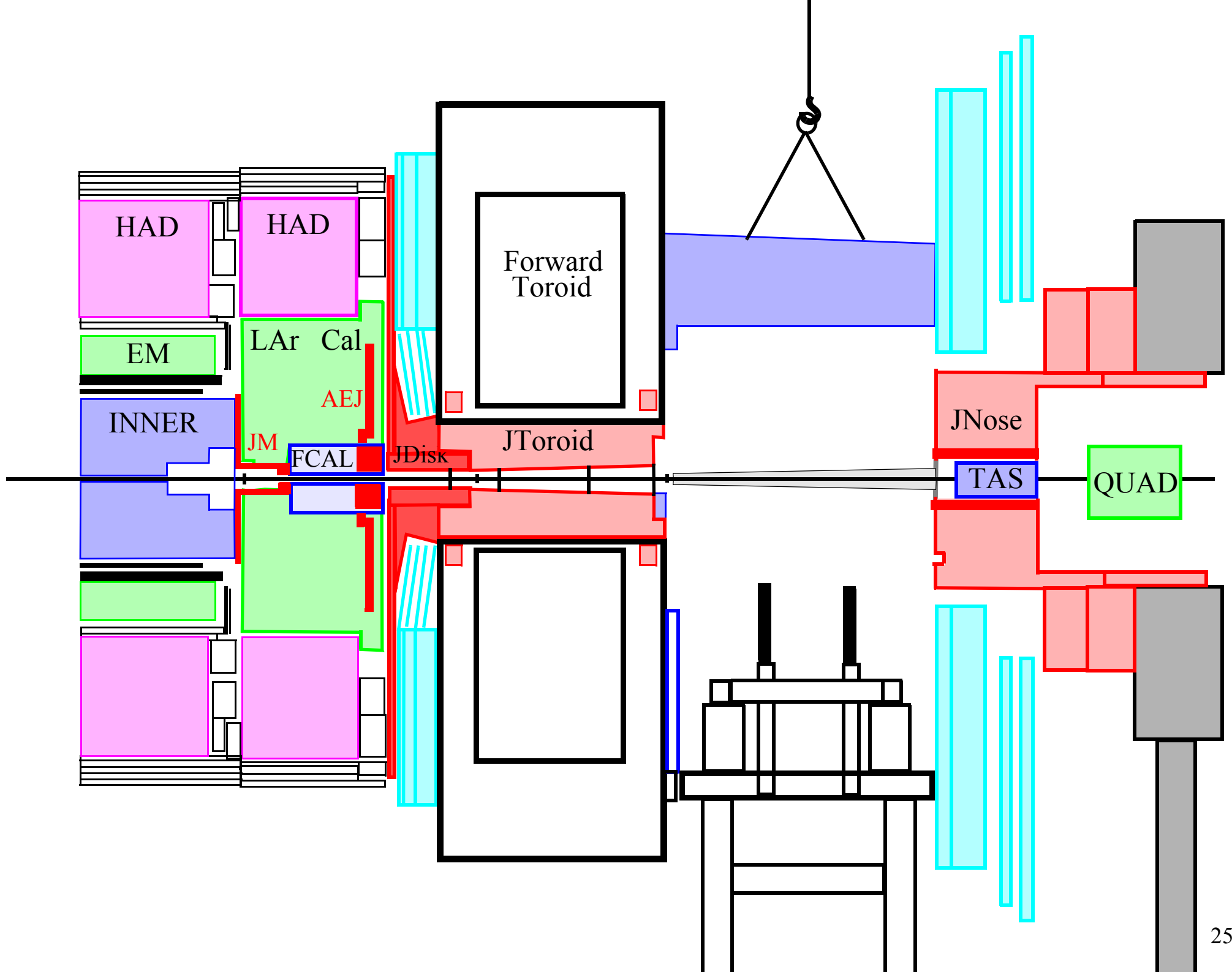
Installation of the lifting frame.

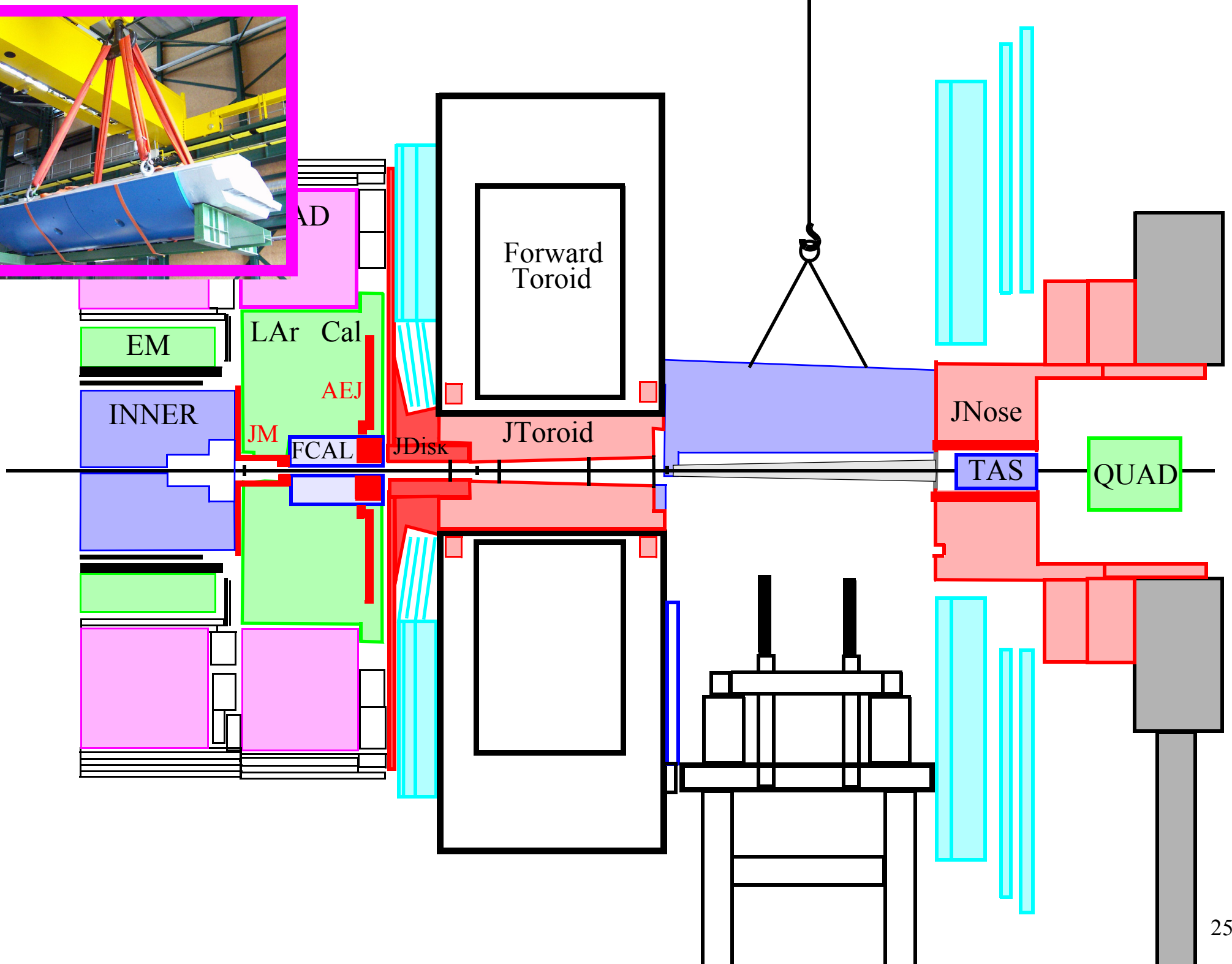




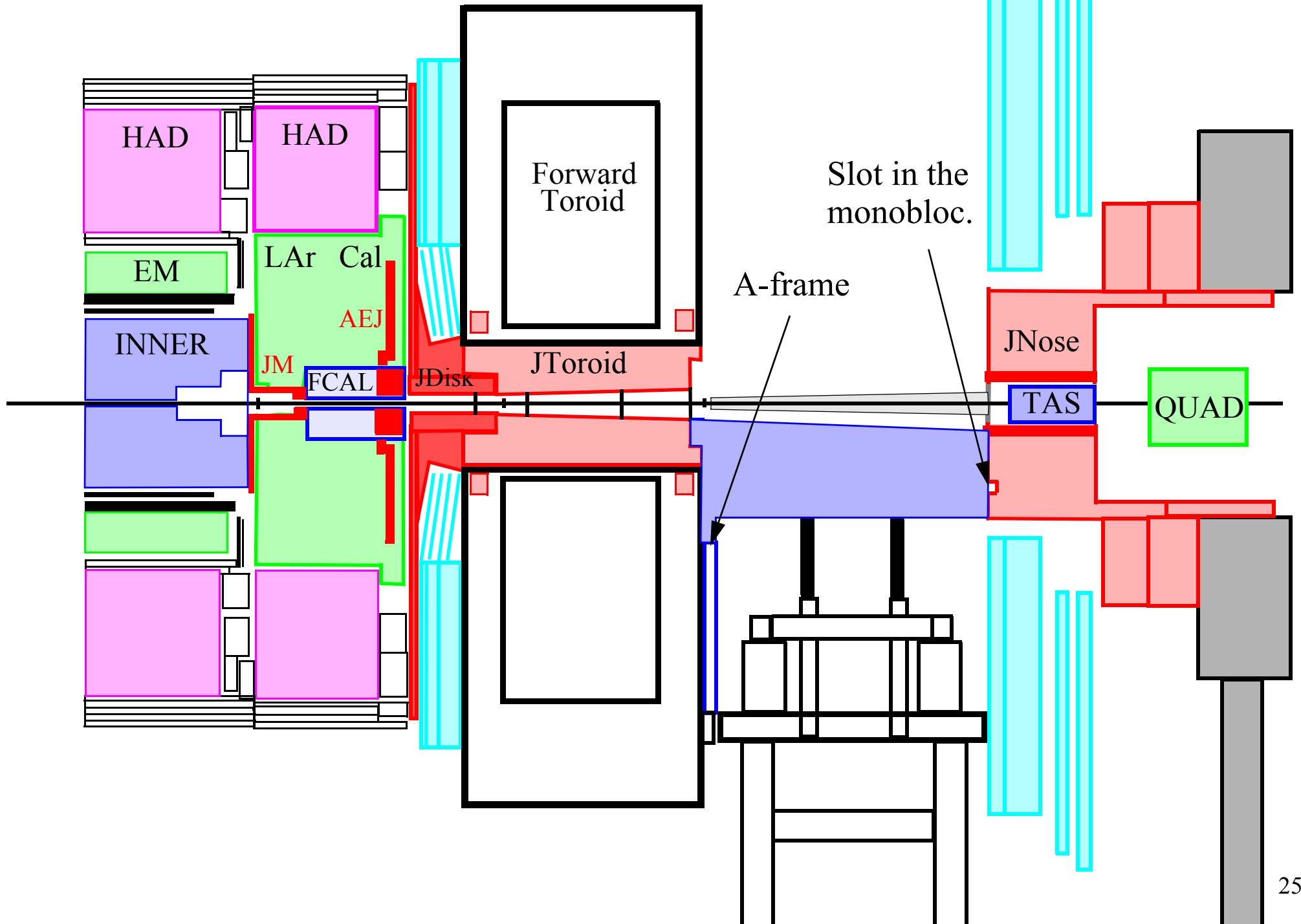
The JF bridge is lowered with the help of the rails.

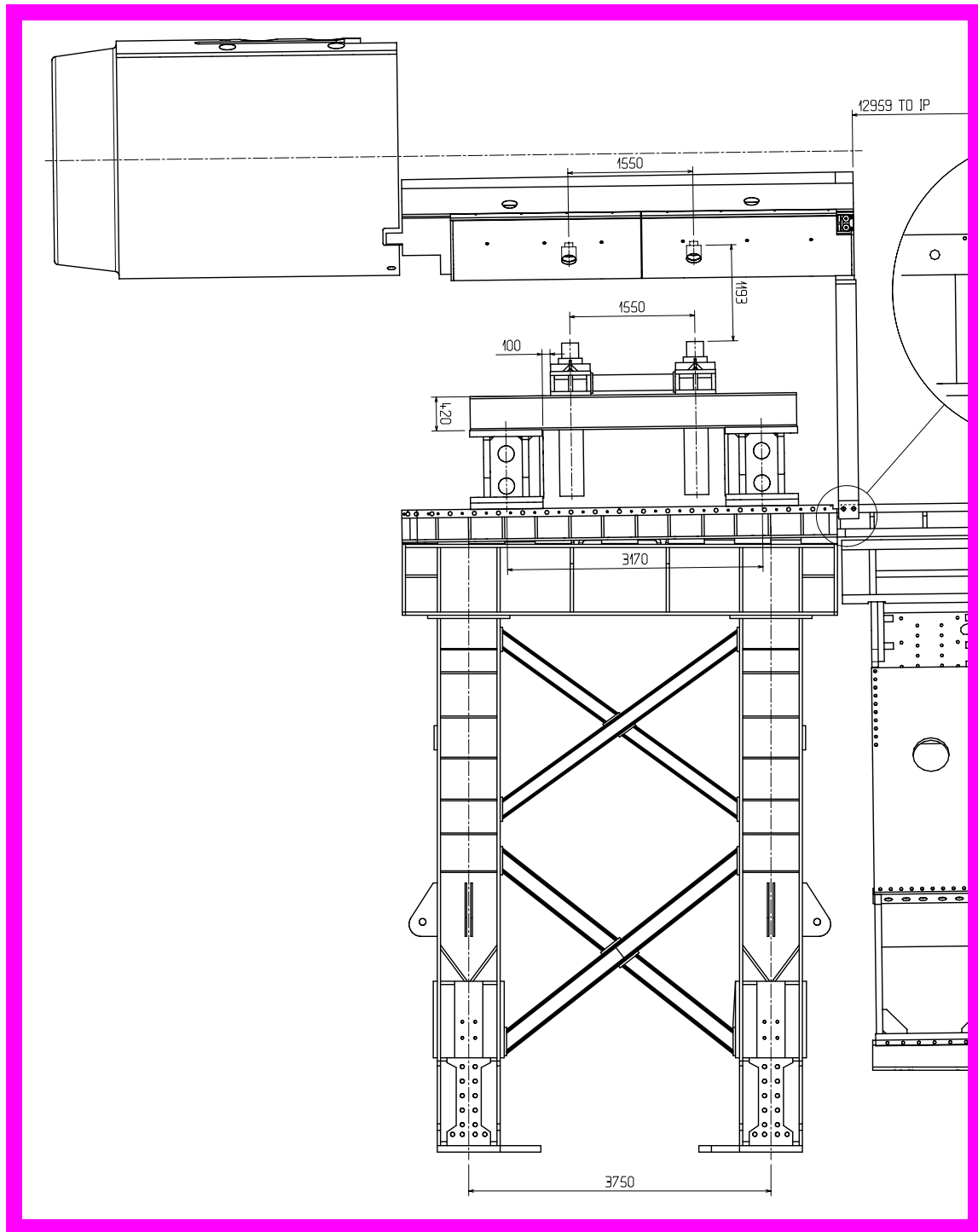
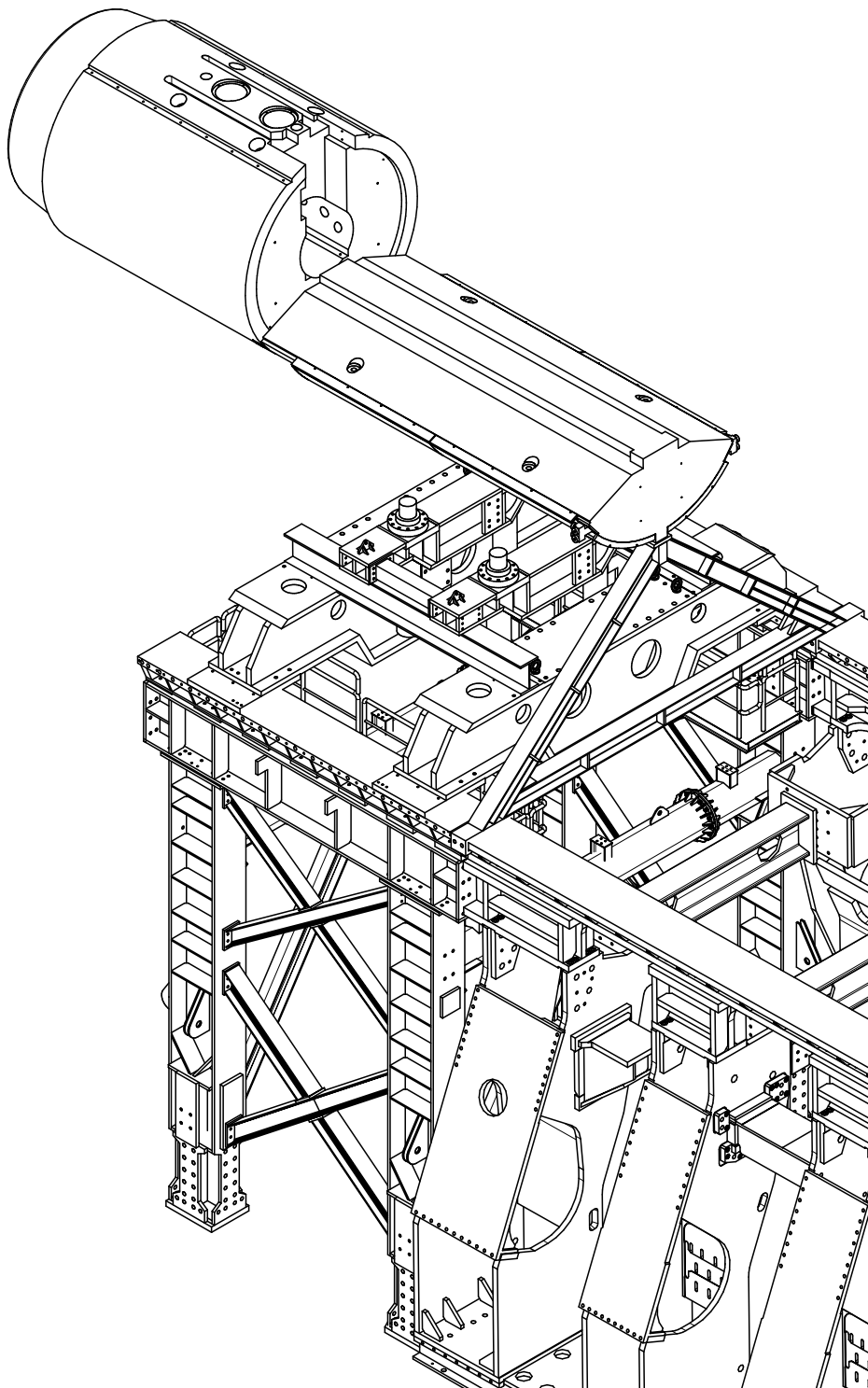




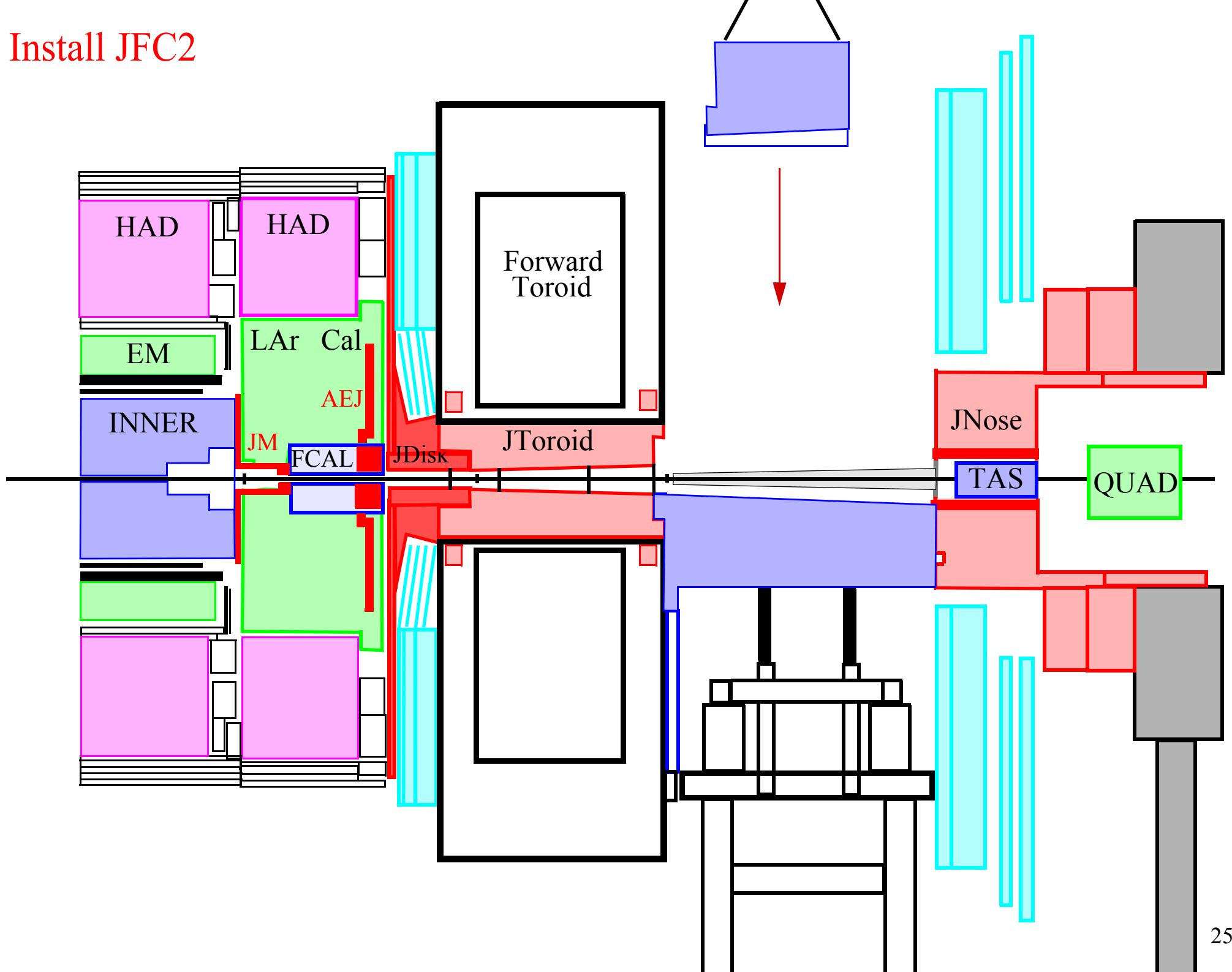


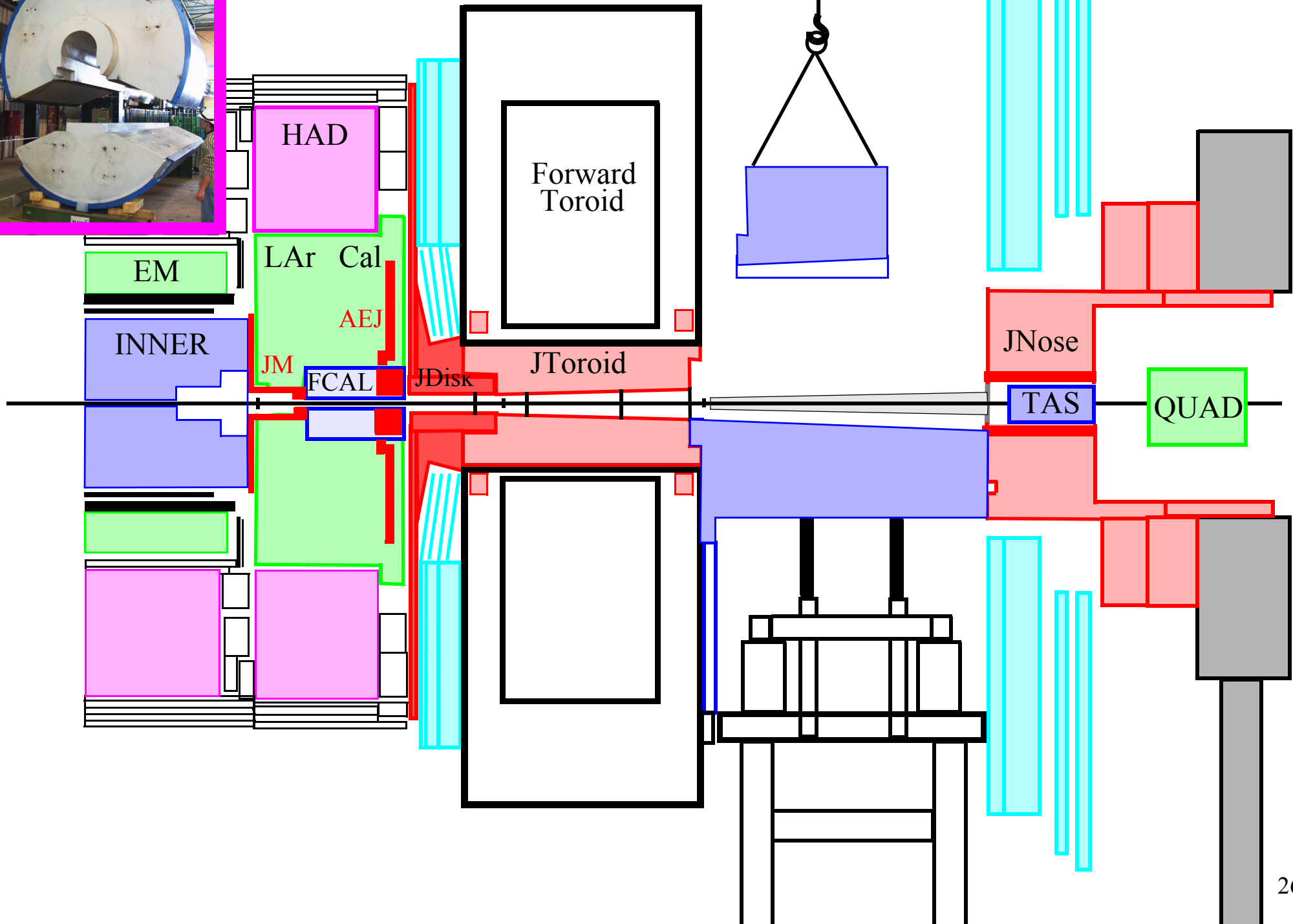
The HF truck is moved sideways until the JF bridge is resting on the A-frame and the slot in the monobloc.

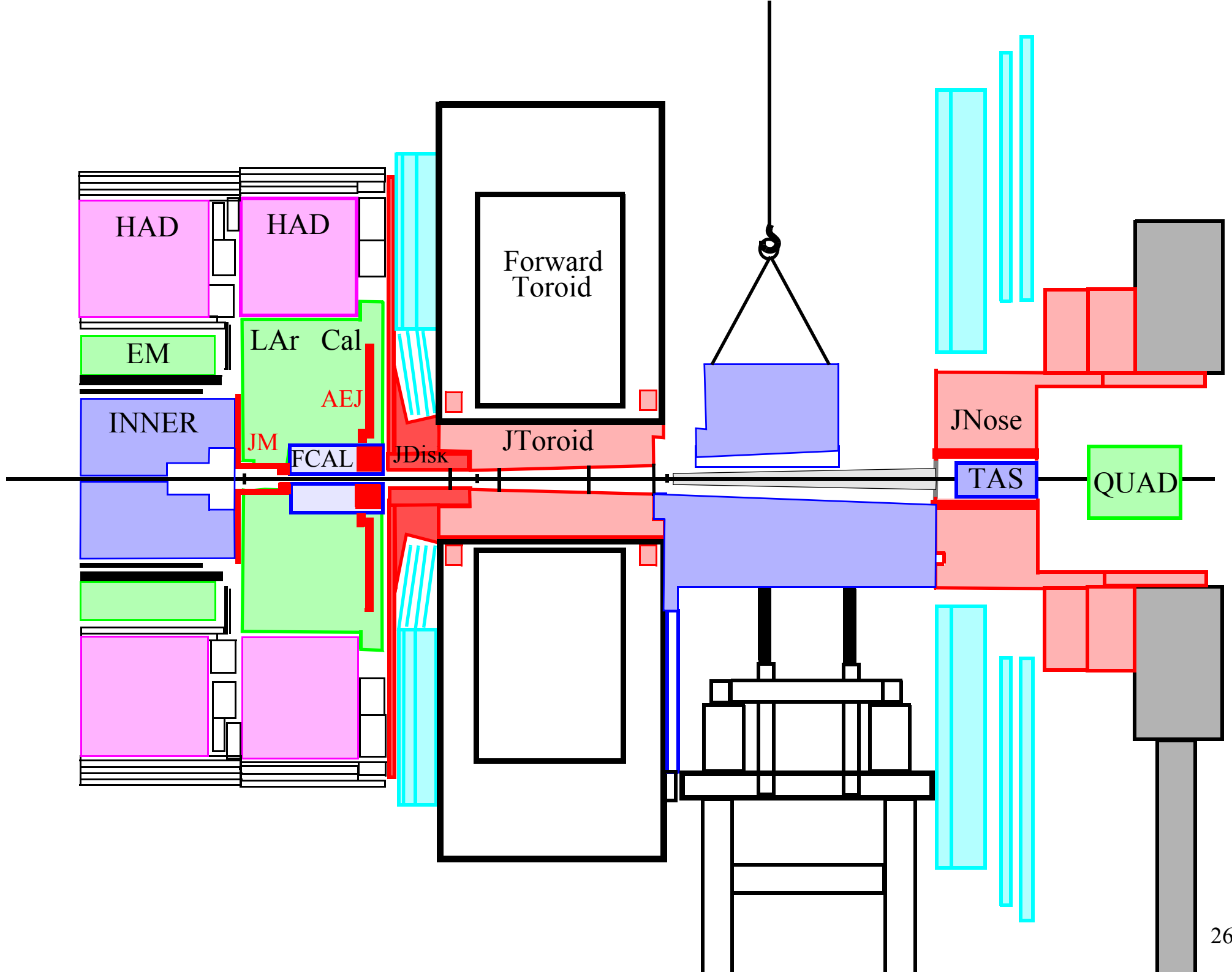


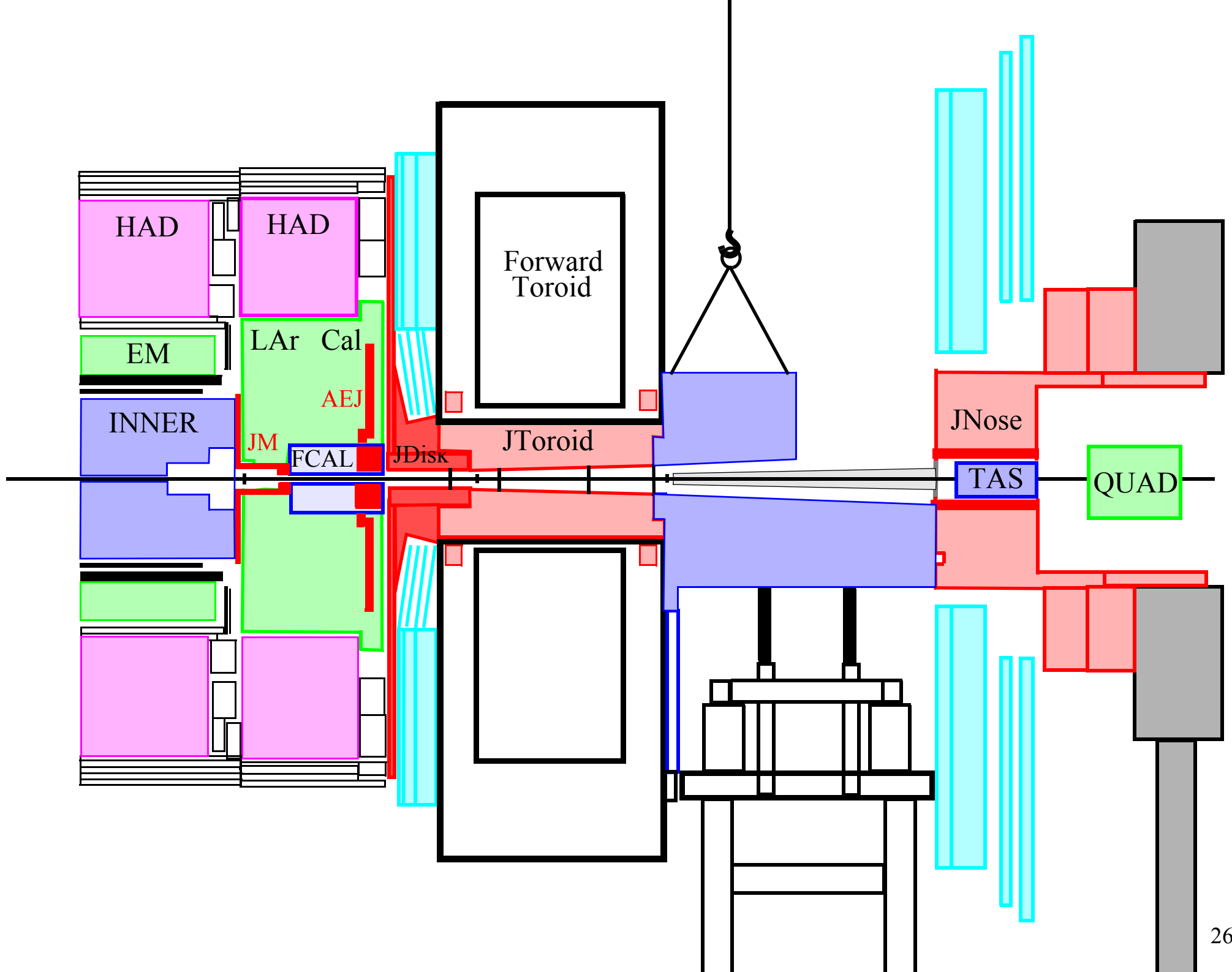


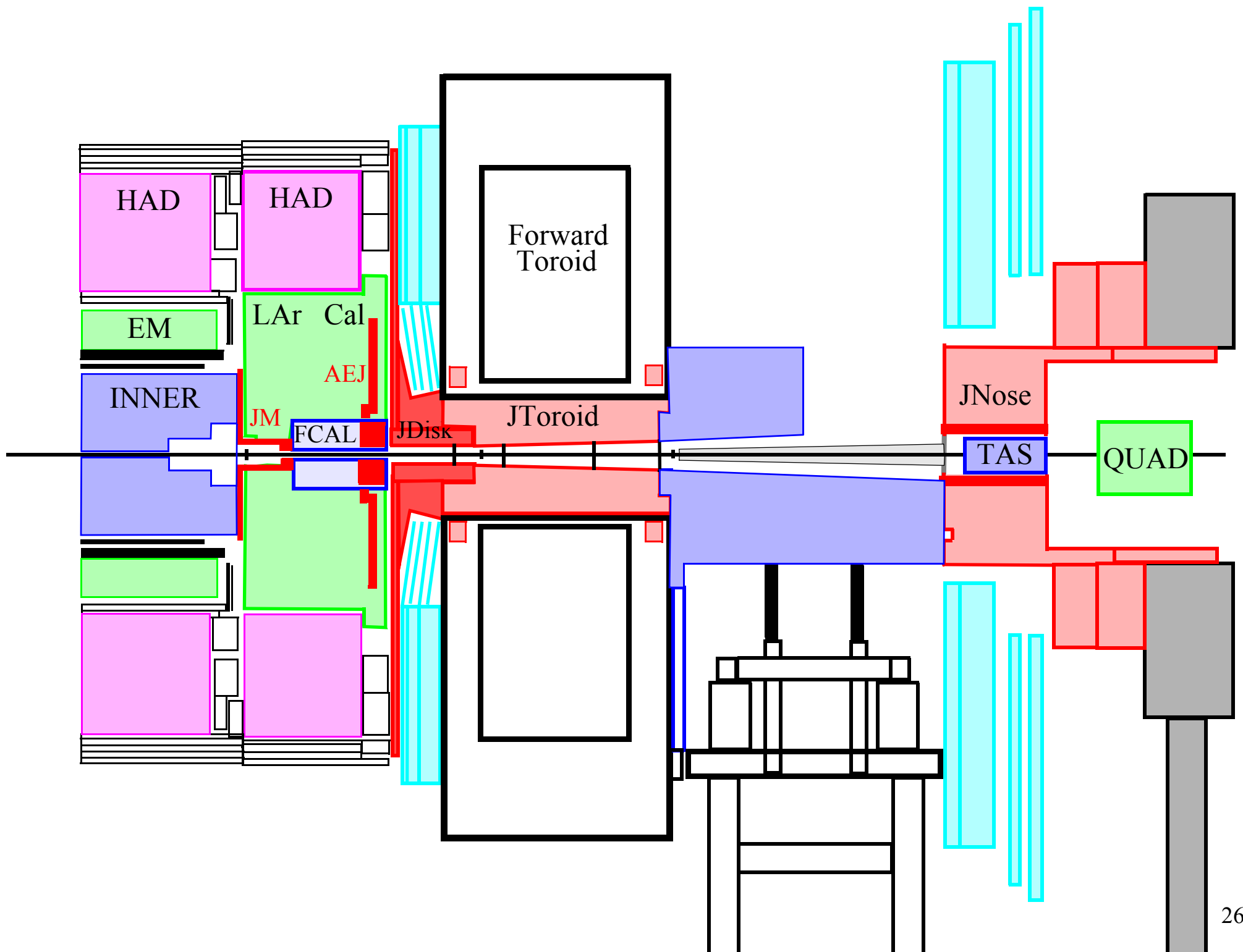
Install JFC2



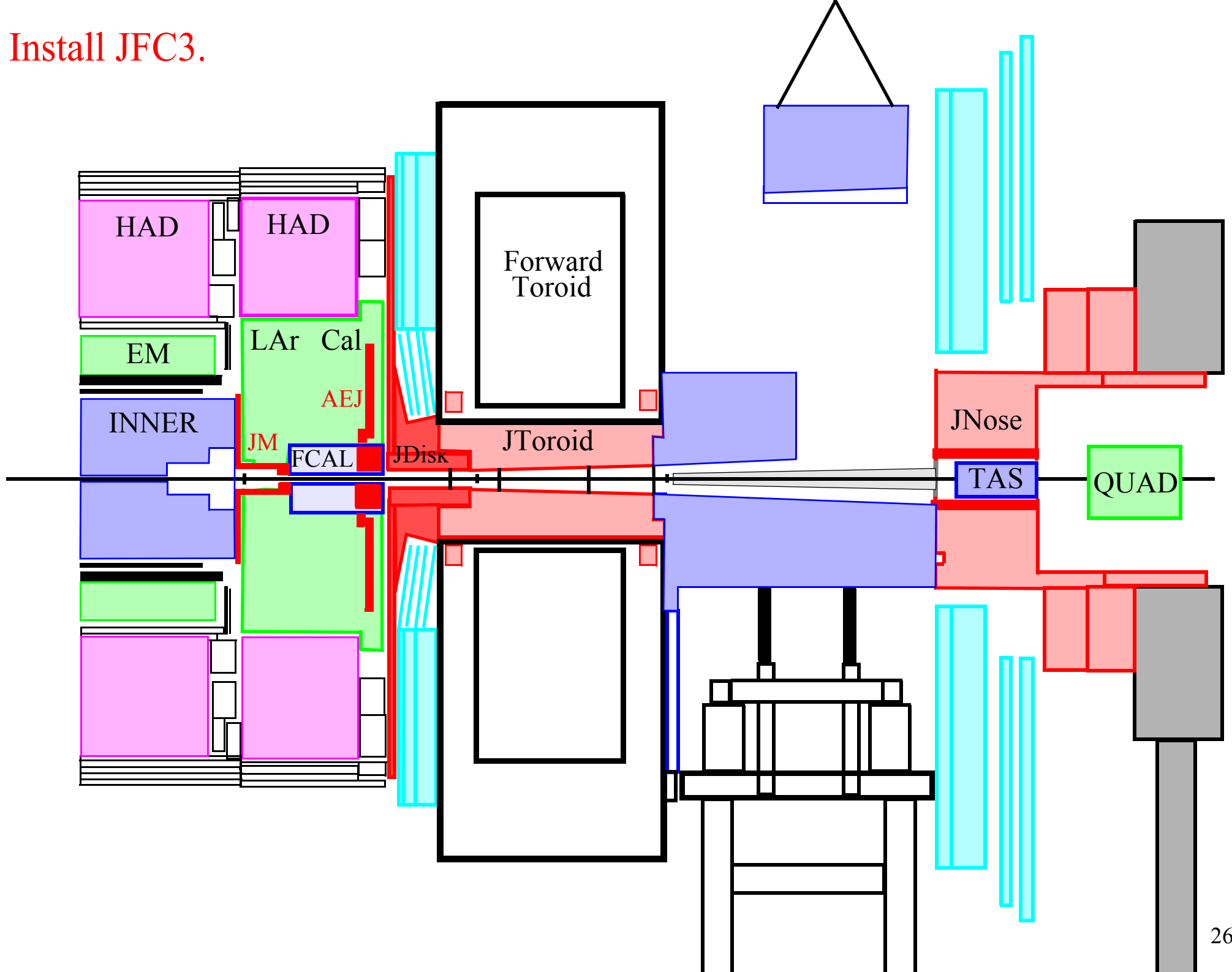


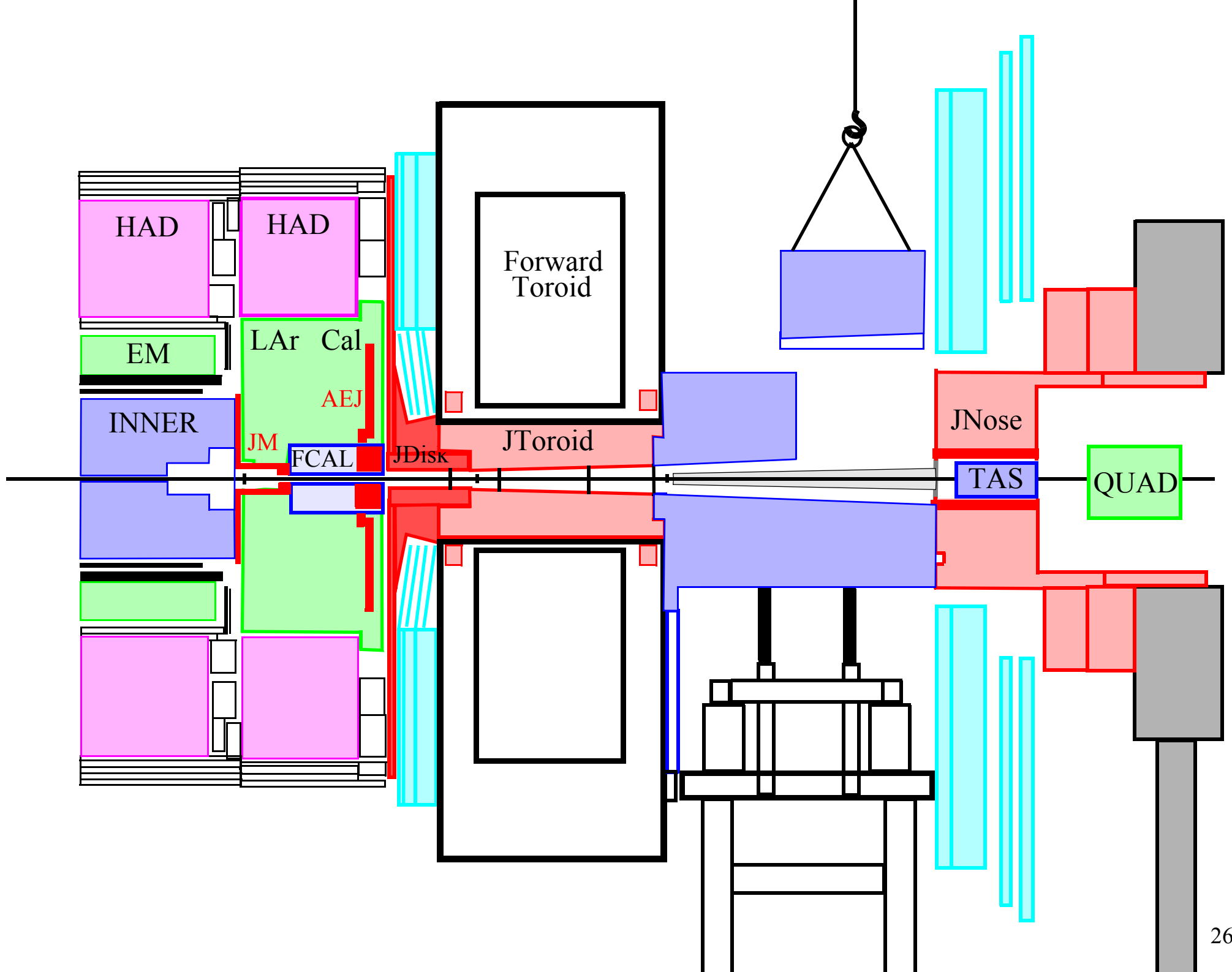


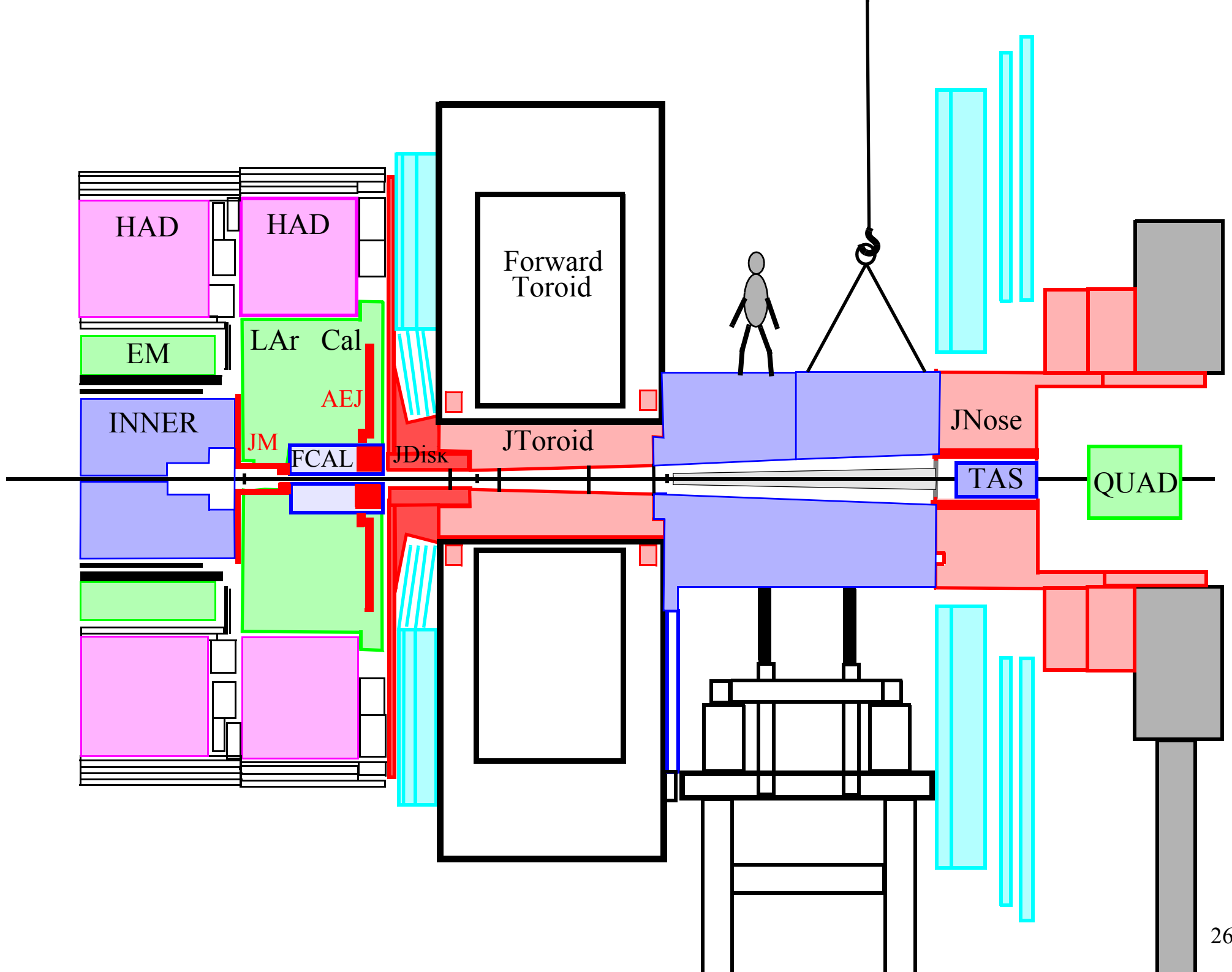


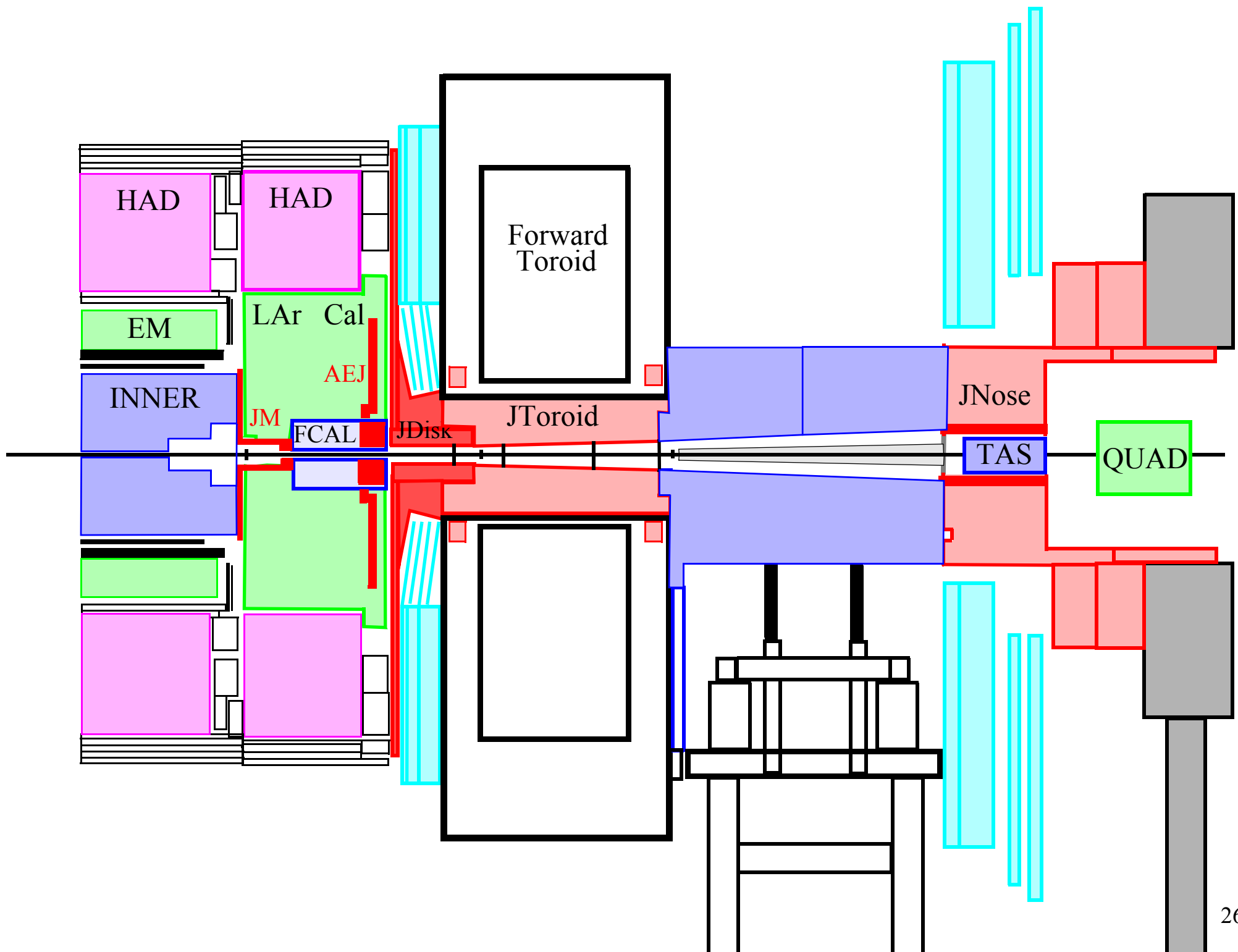


Install JFC3.

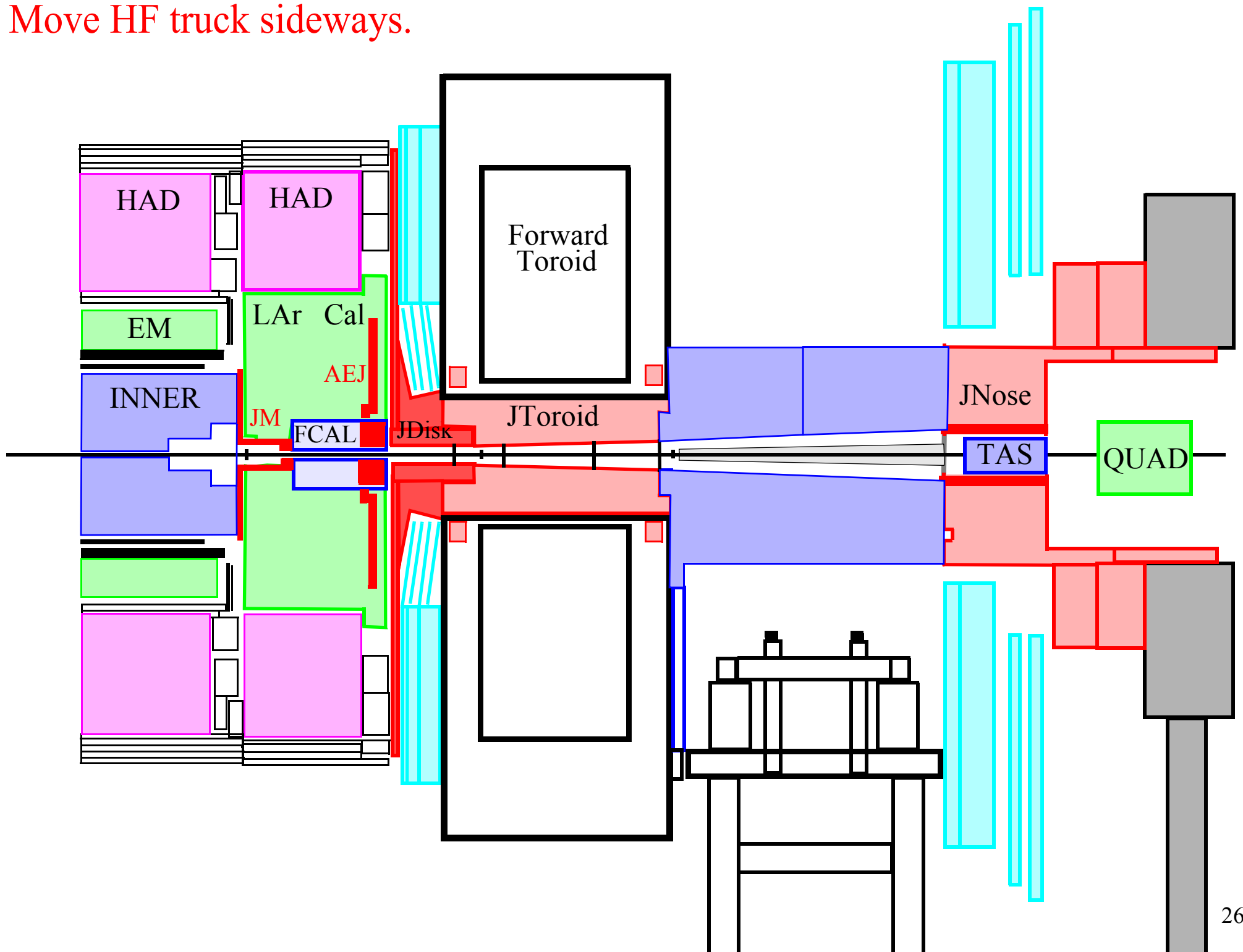




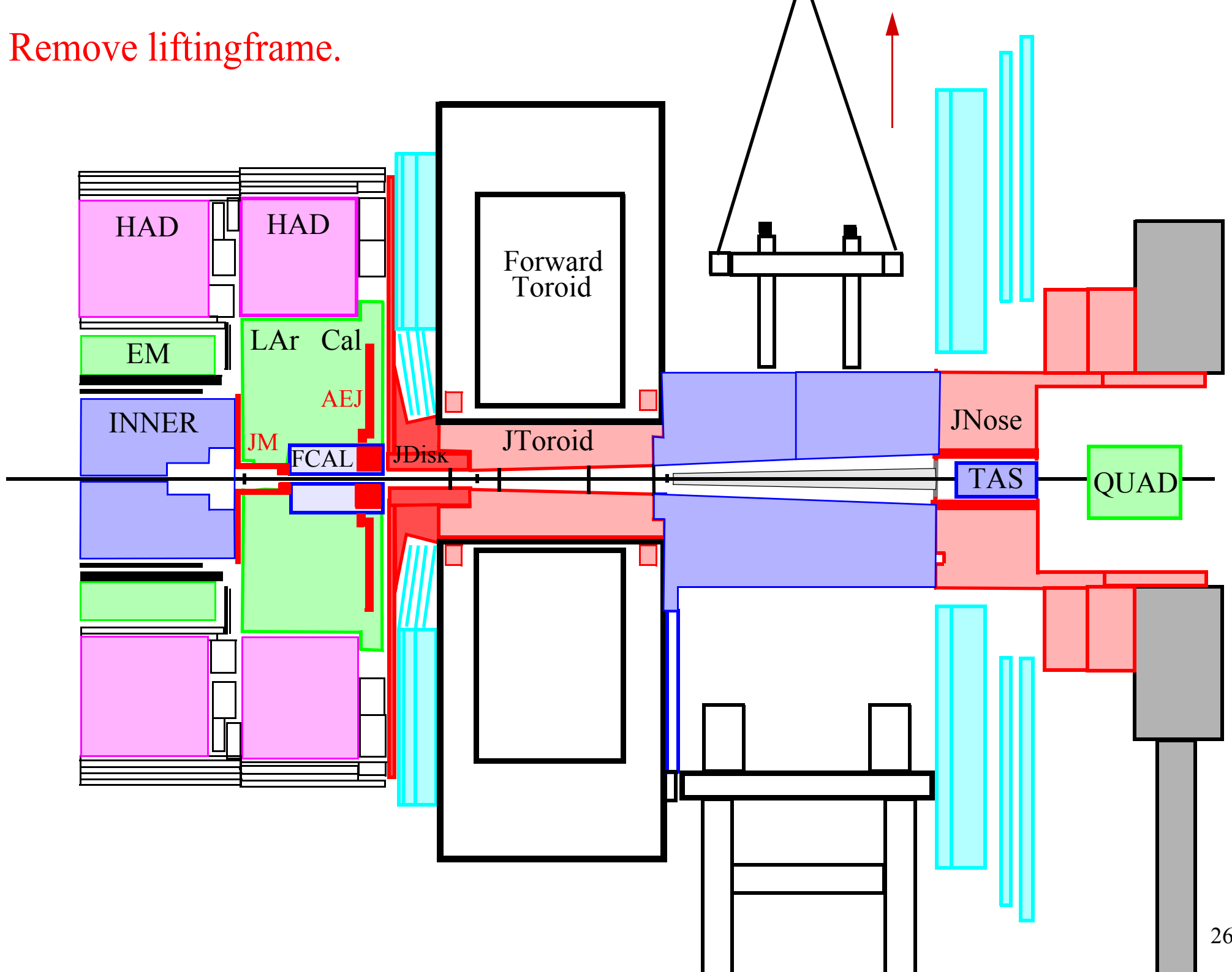




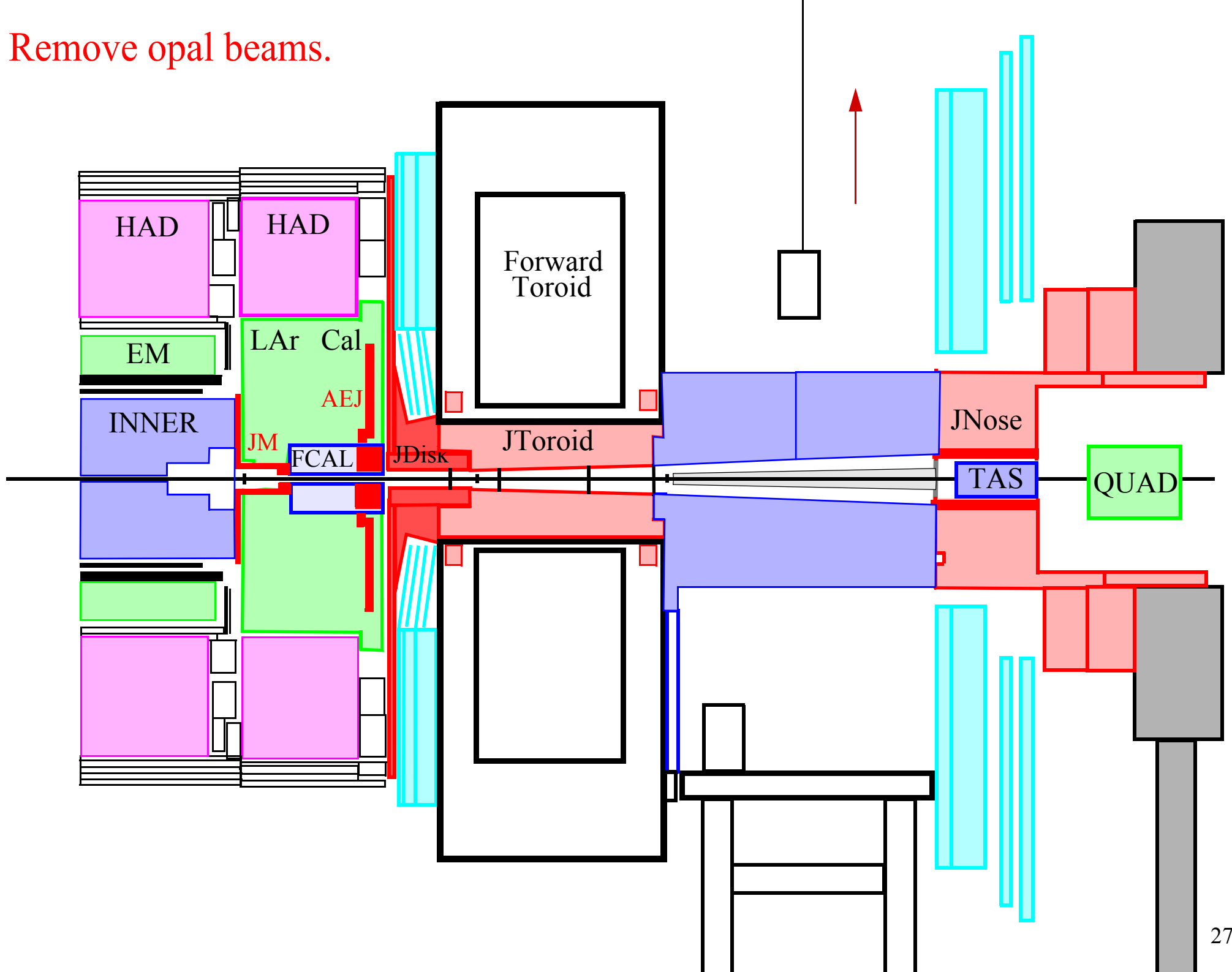
Move HF truck sideways.

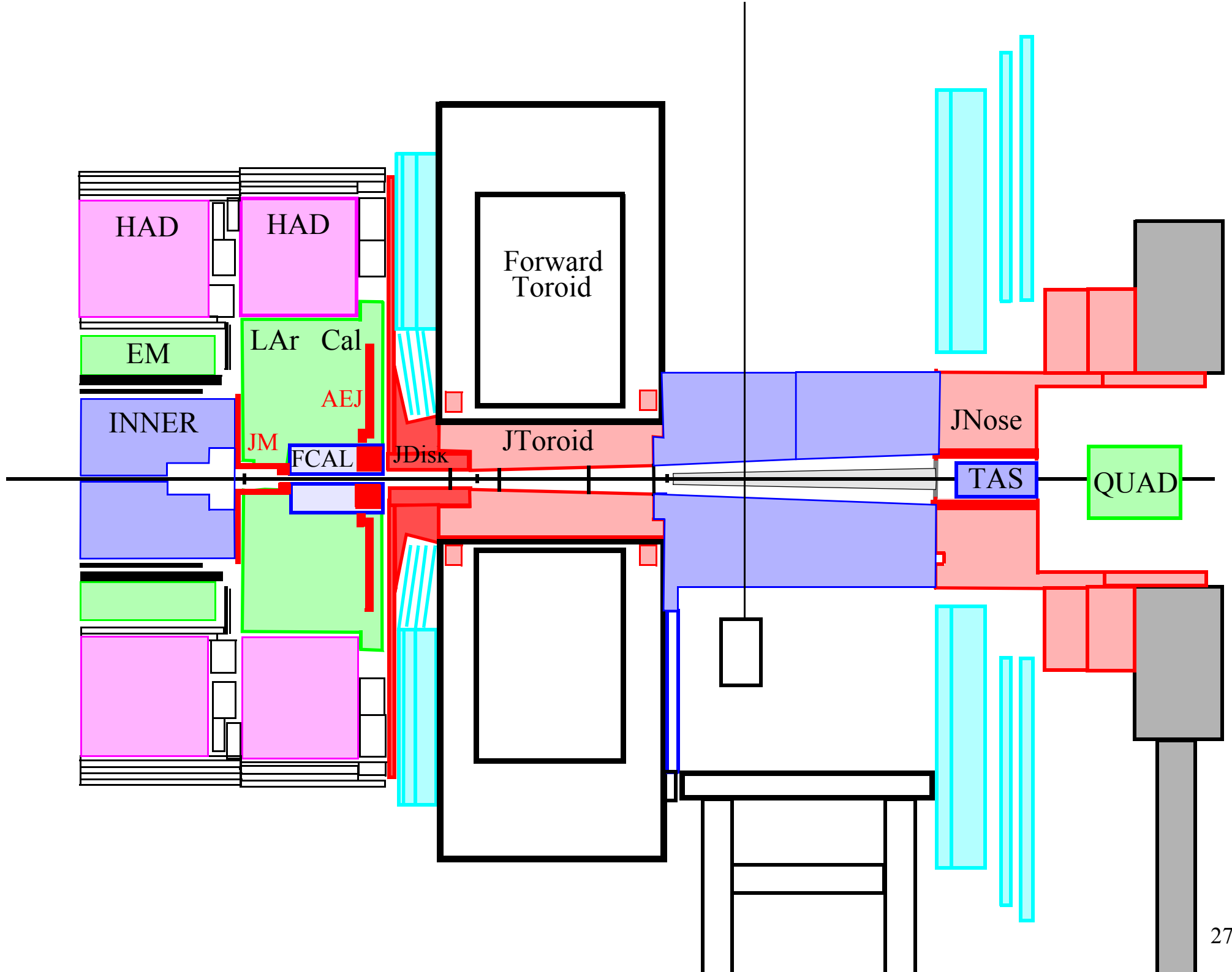


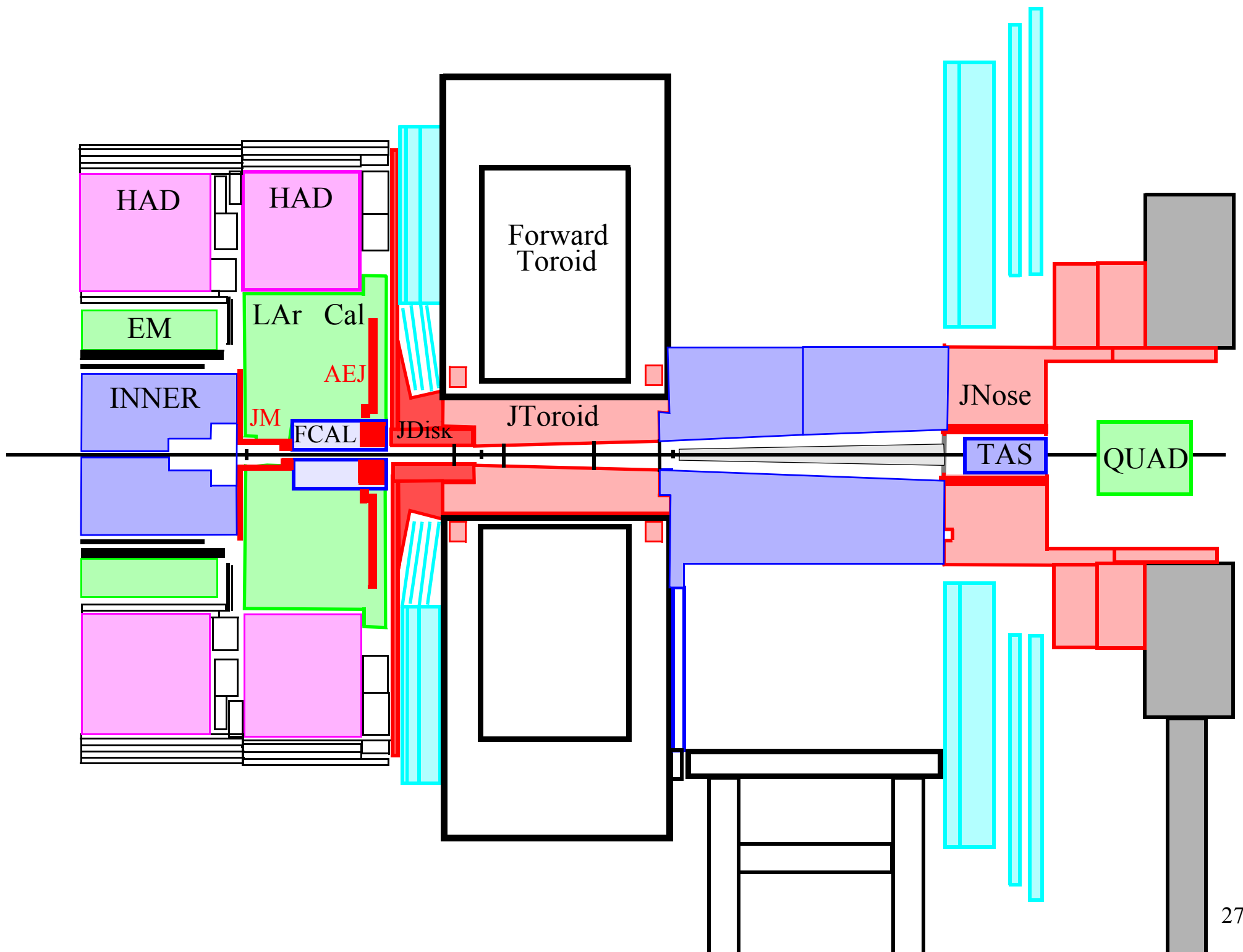
Remove liftingframe.



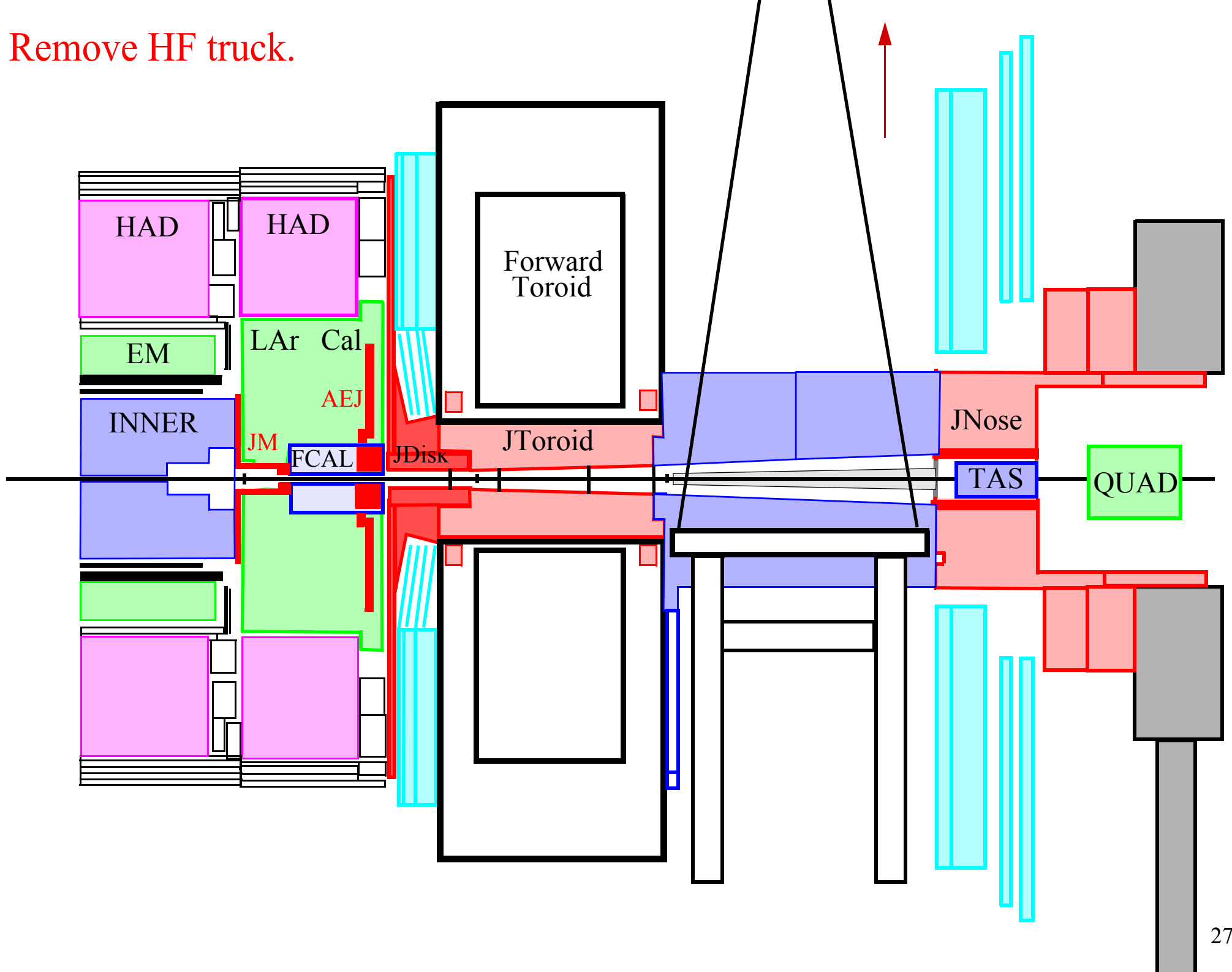
Remove opal beams.

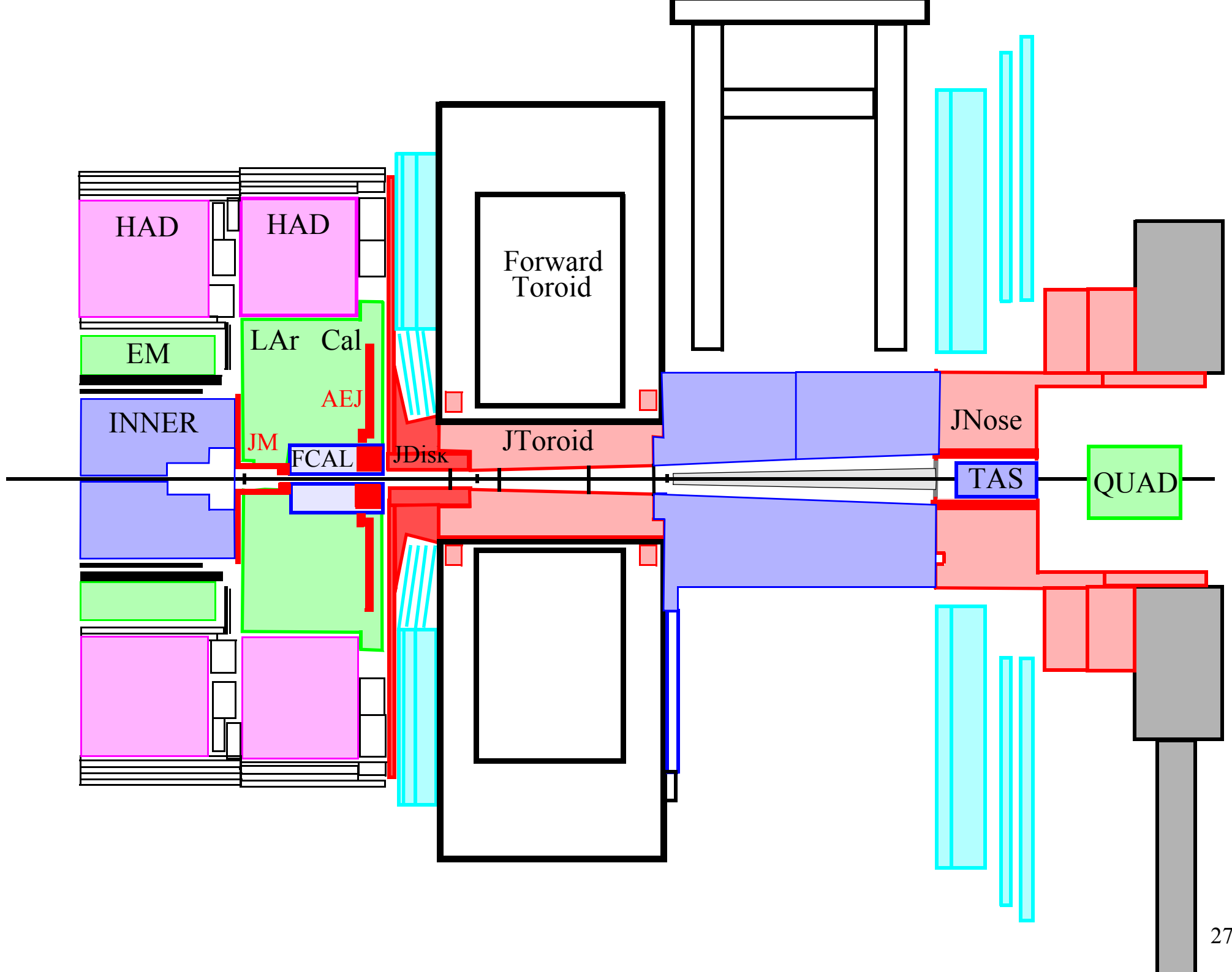




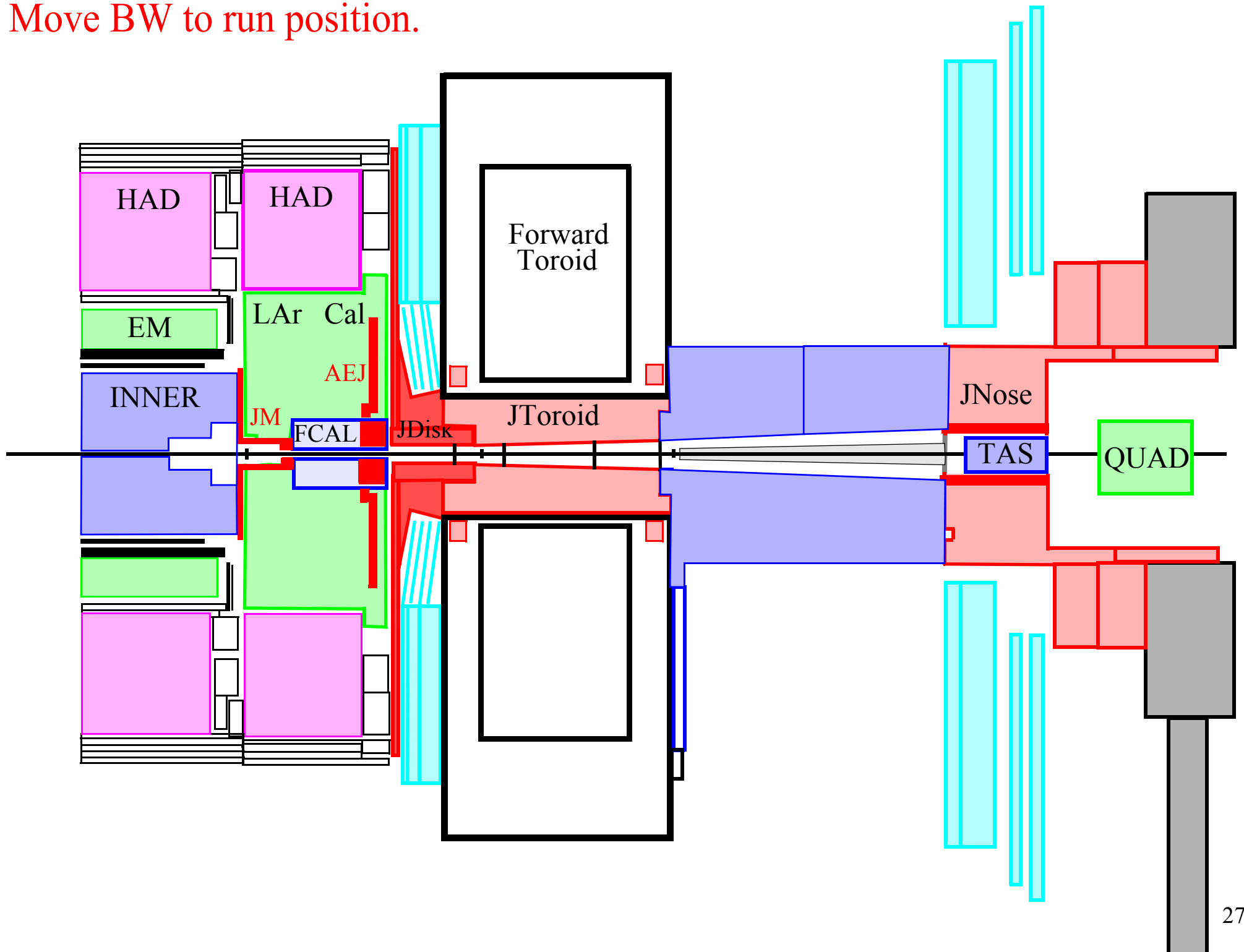


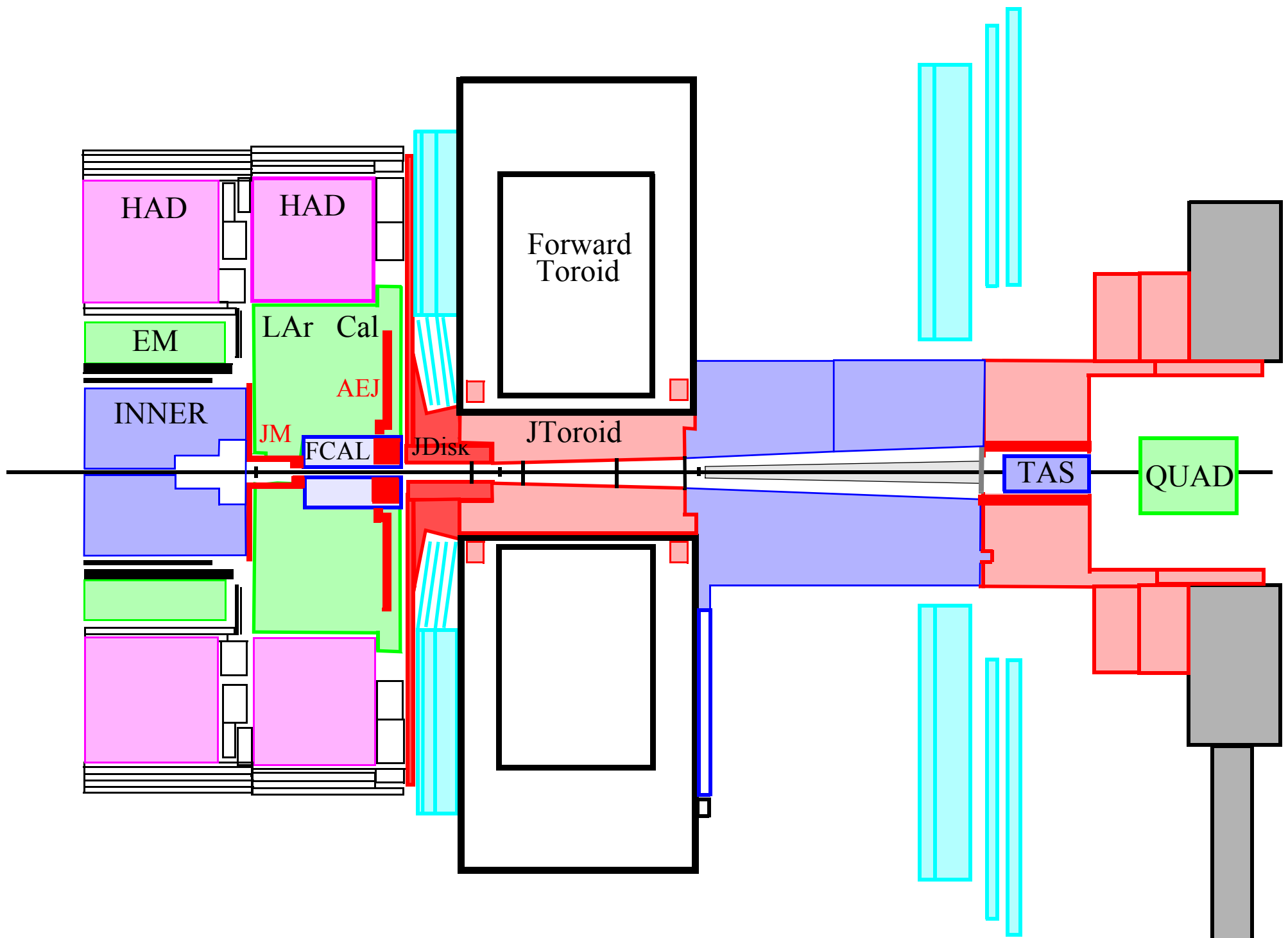
Remove HF truck.

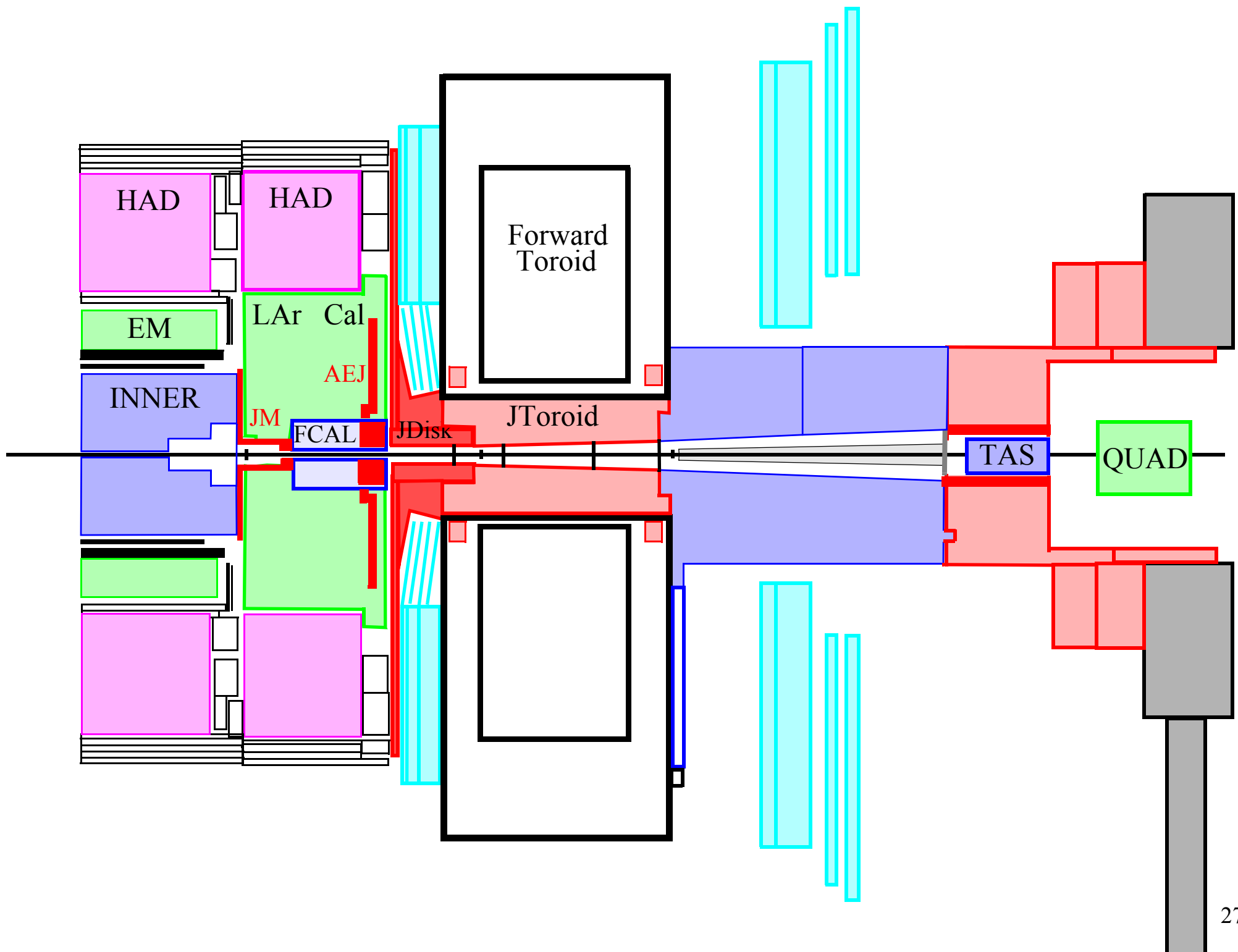


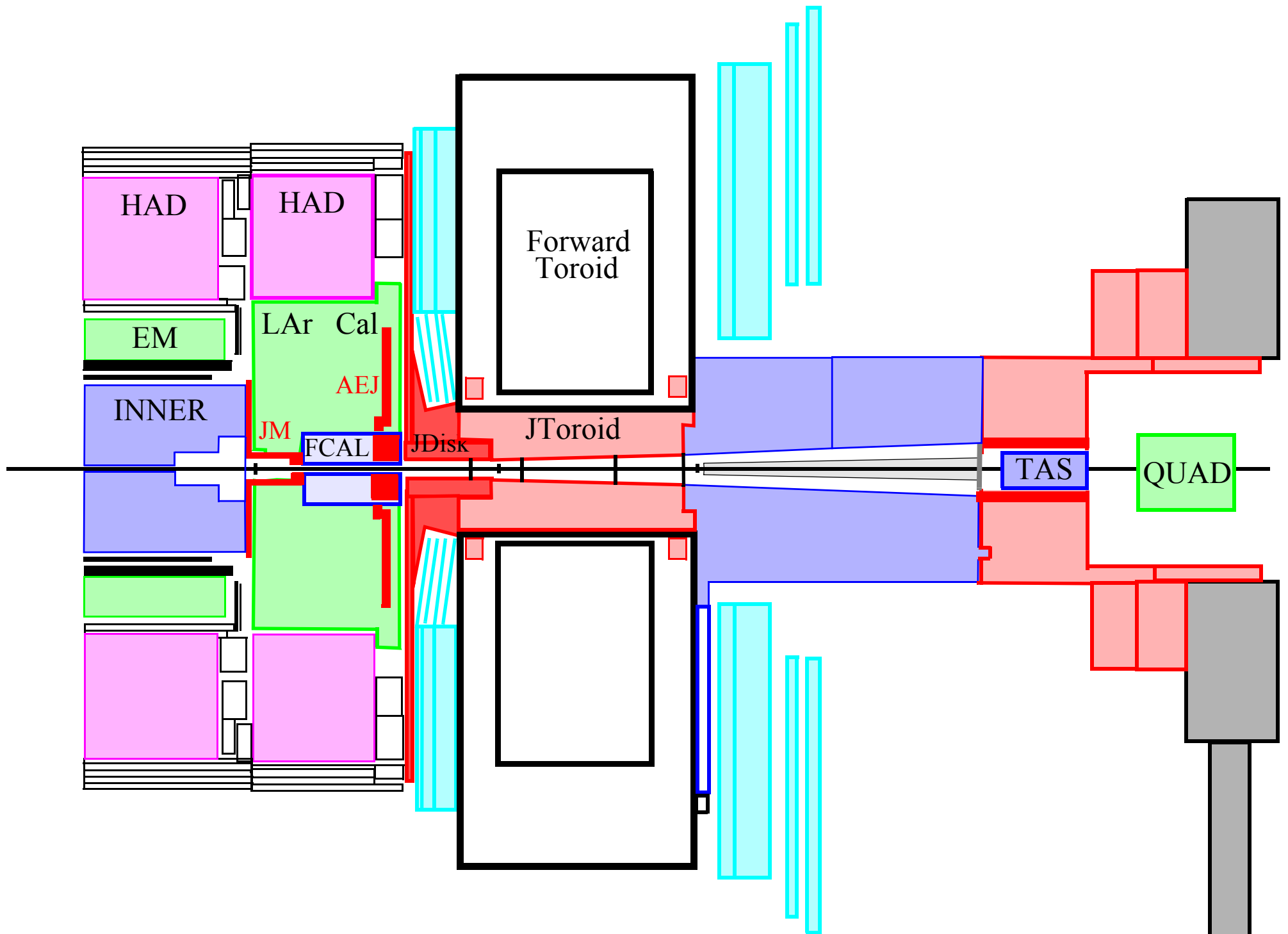


Move BW to run position.

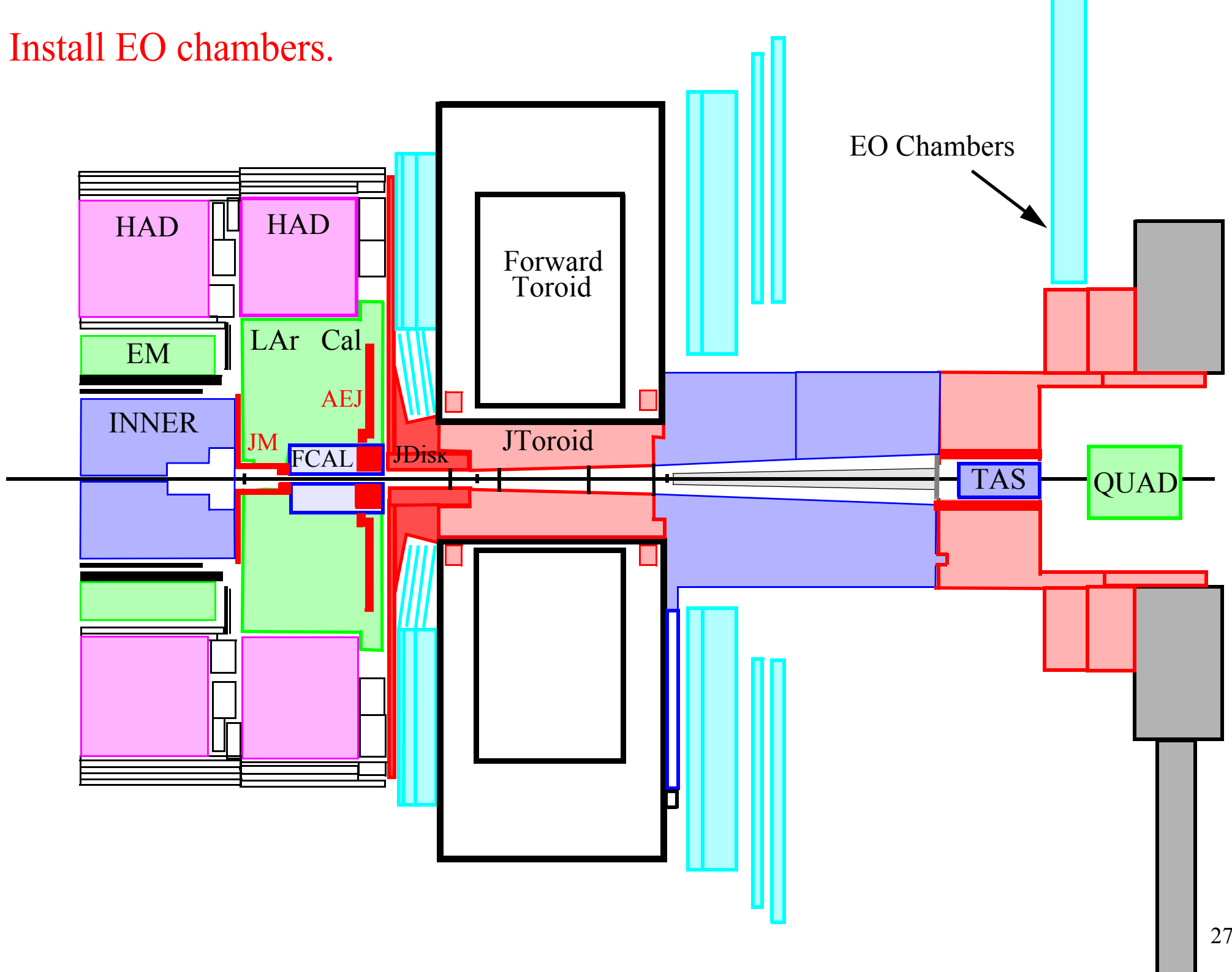


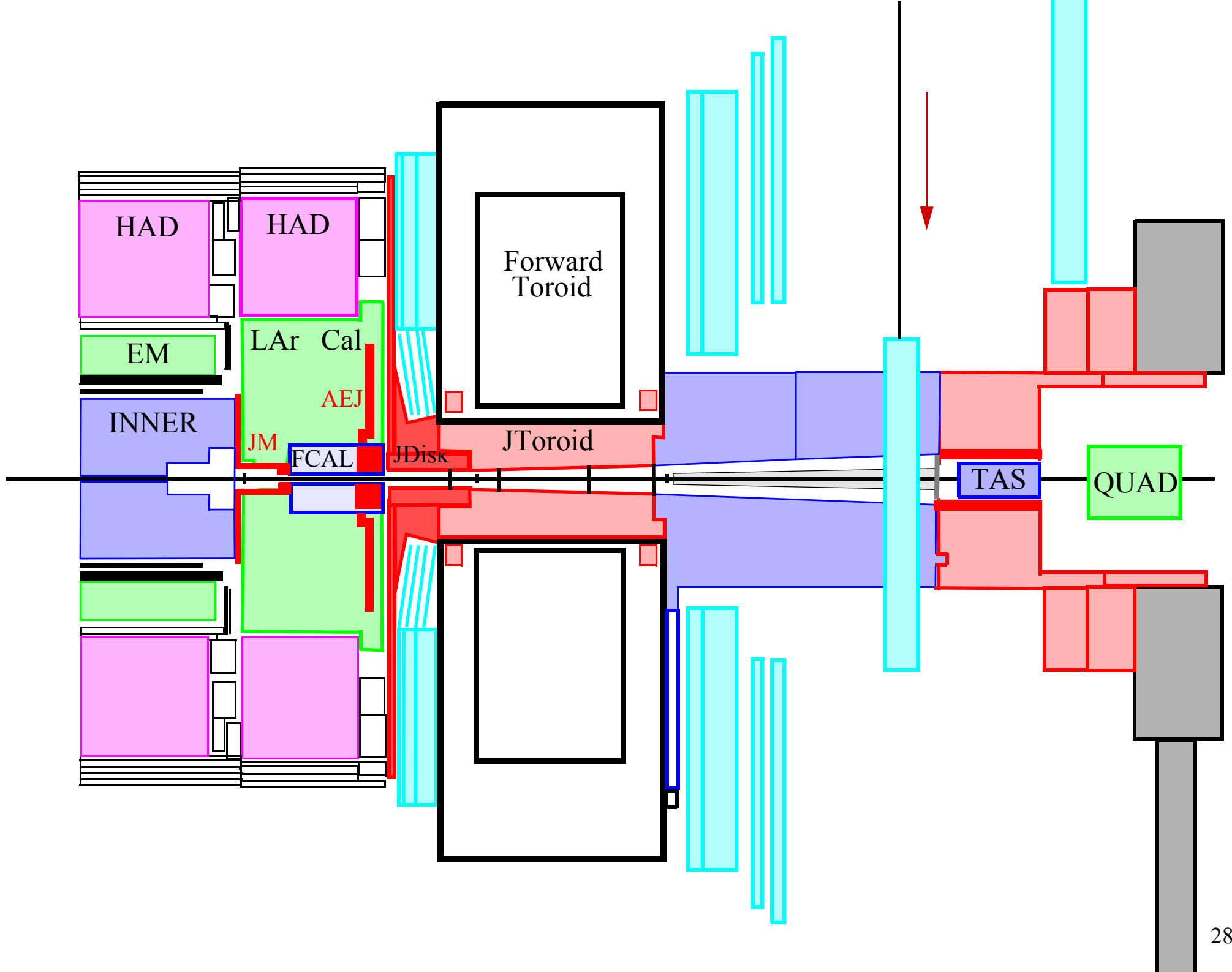


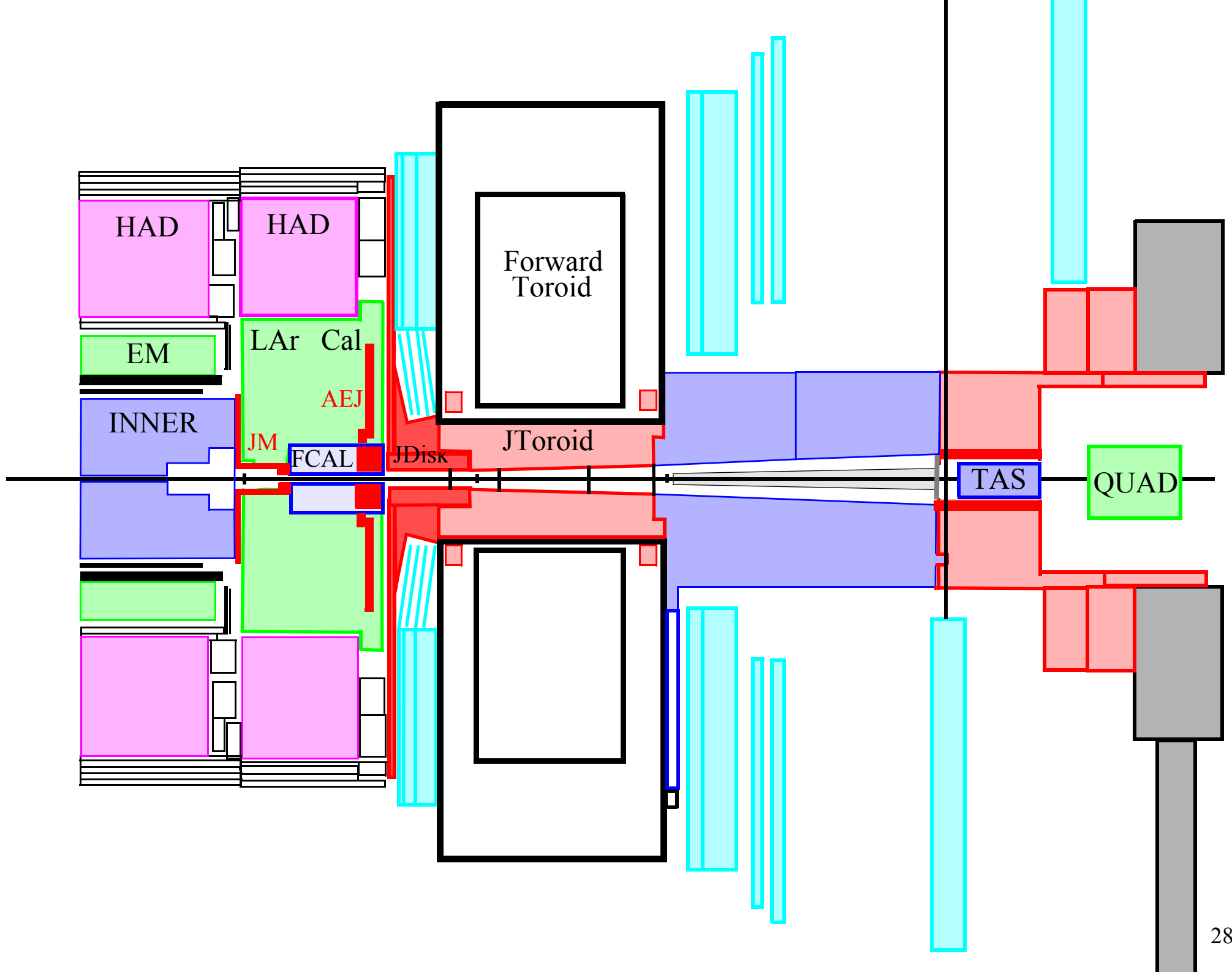


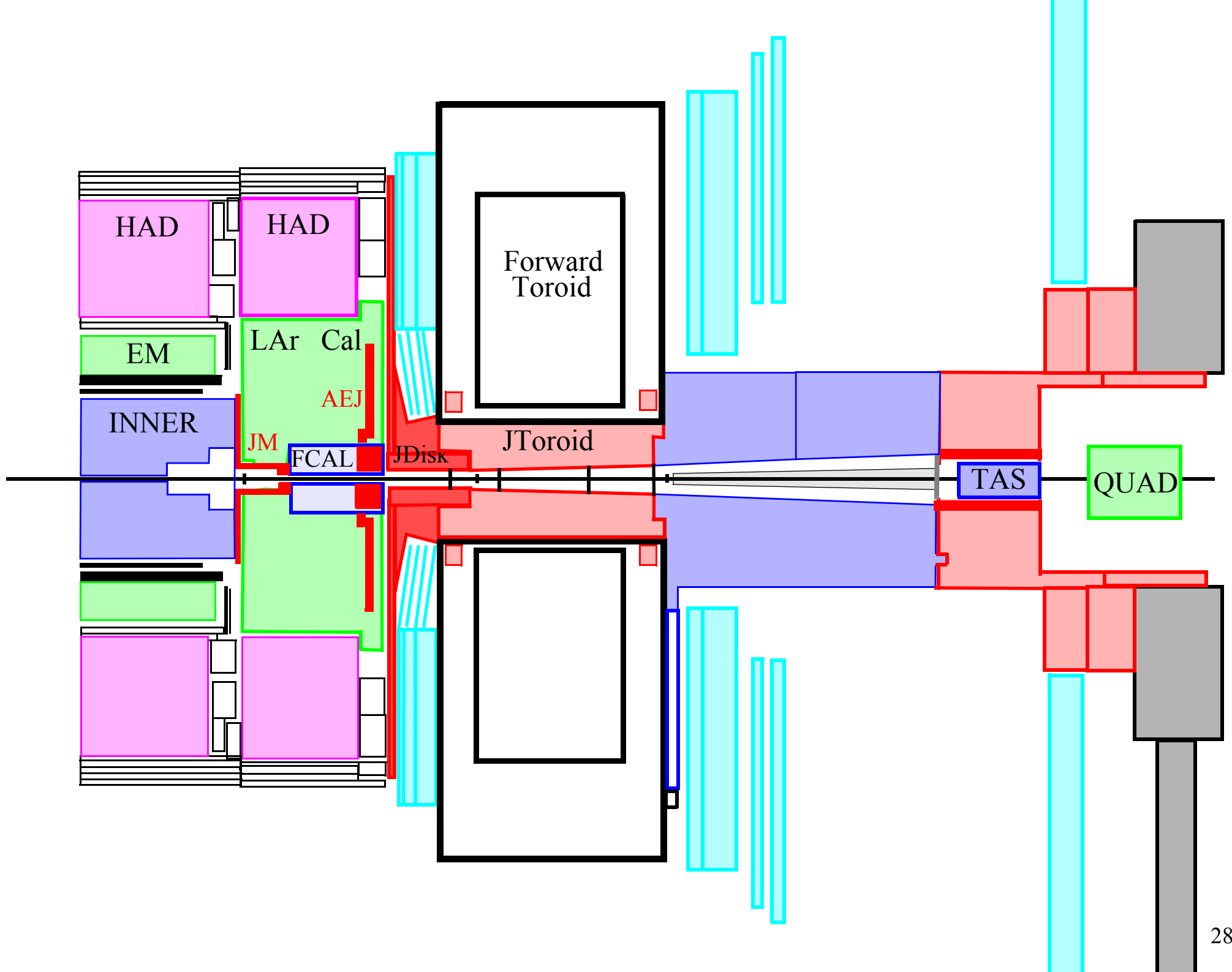


Install EO chambers.

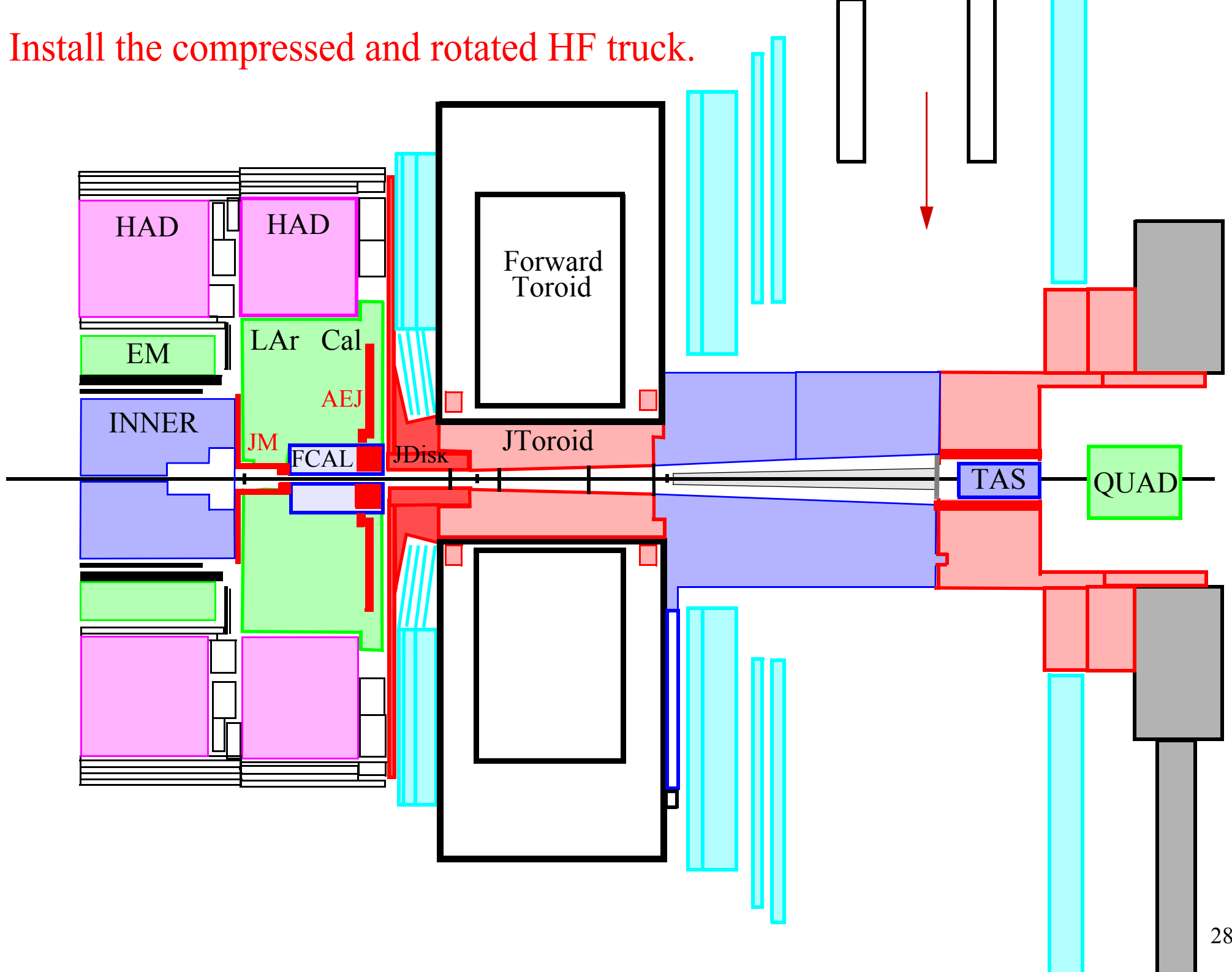




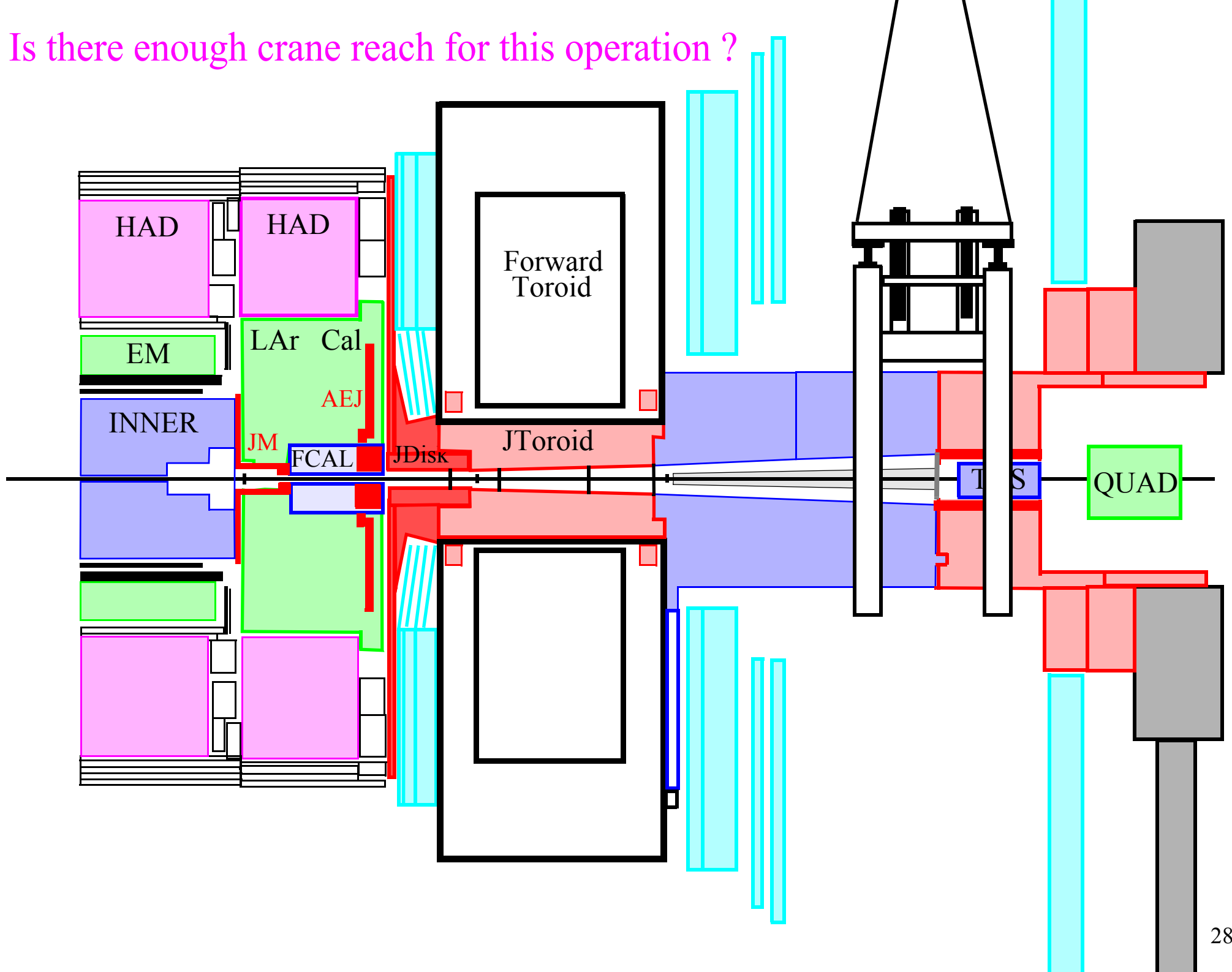


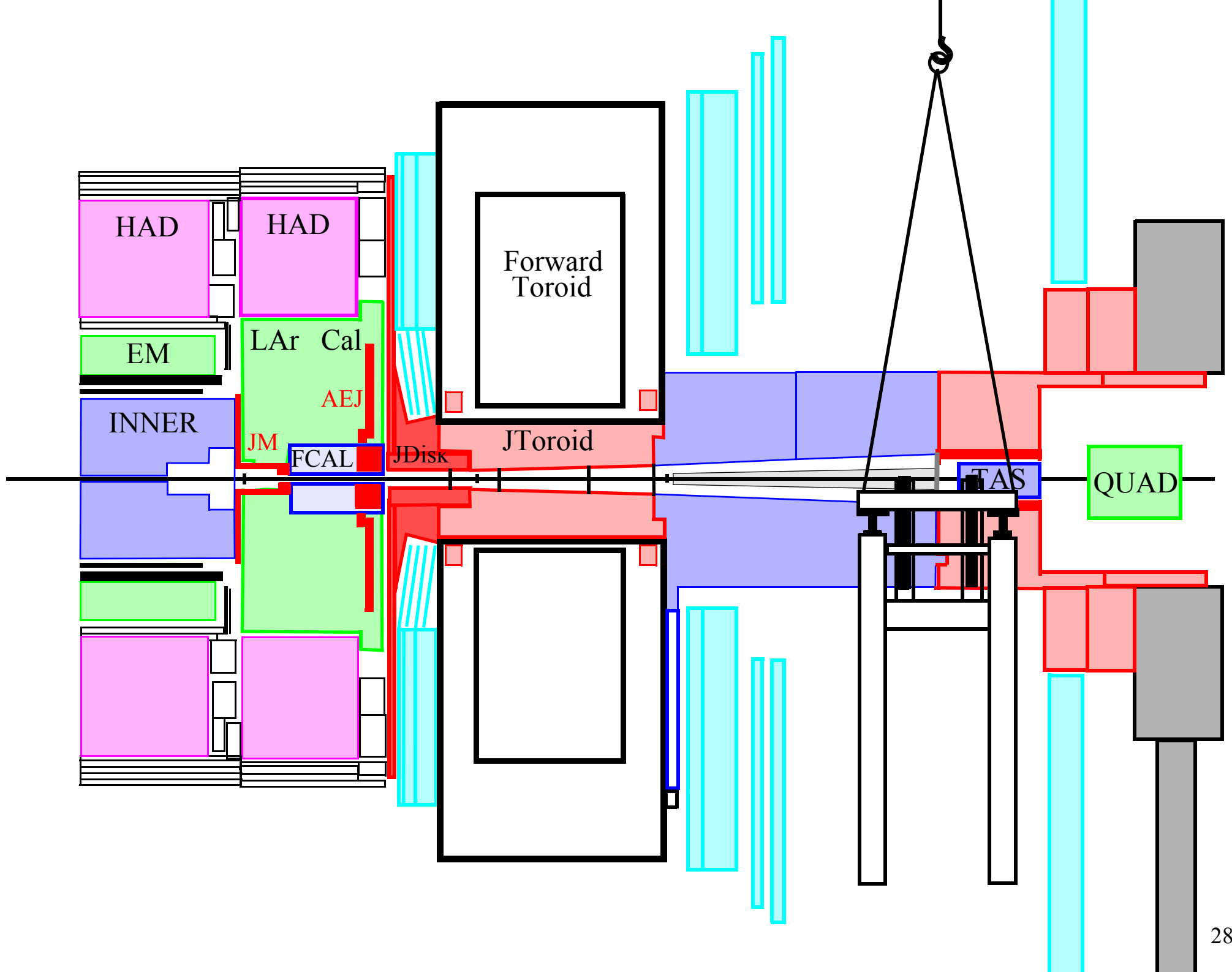


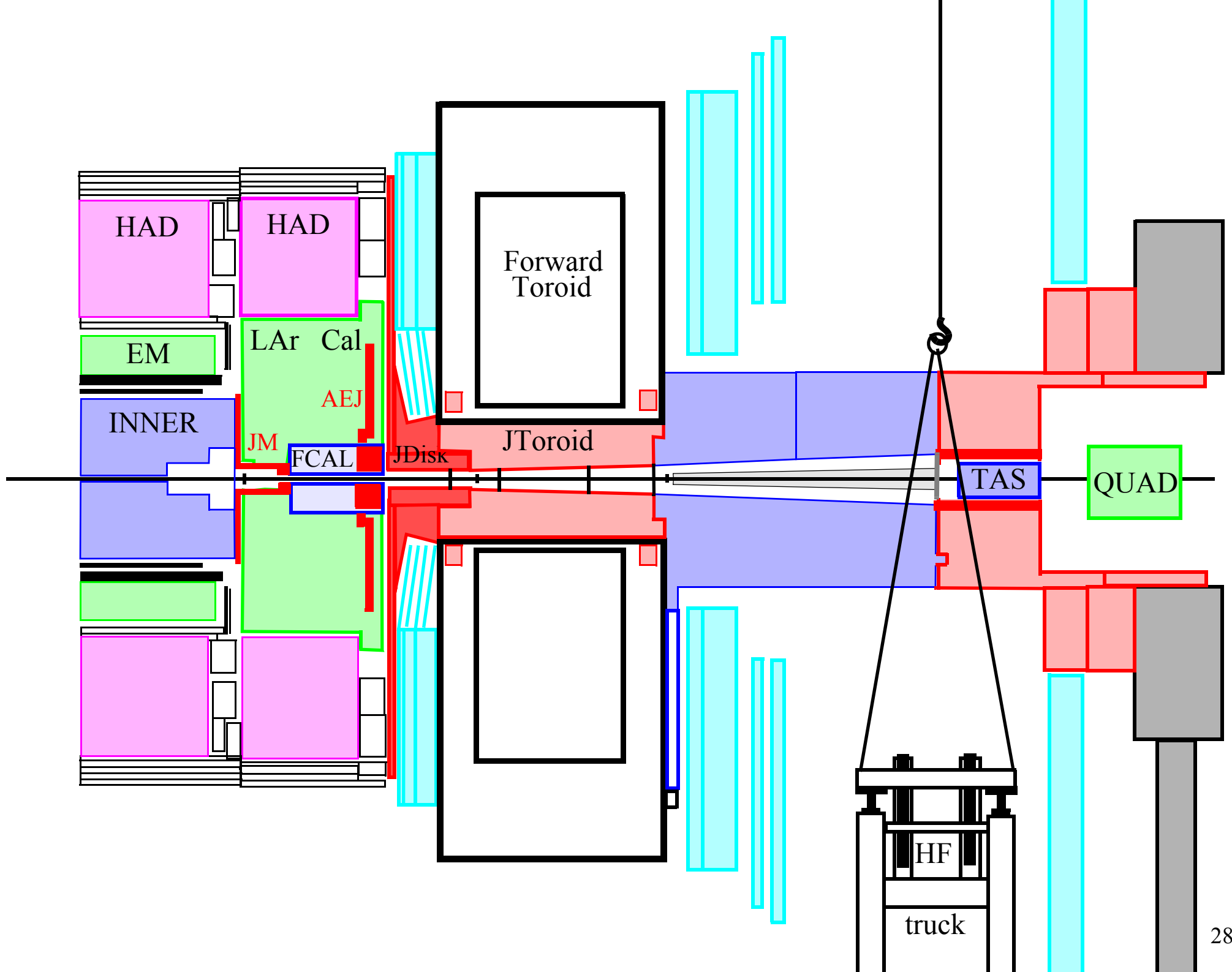
Install the compressed and rotated HF truck.



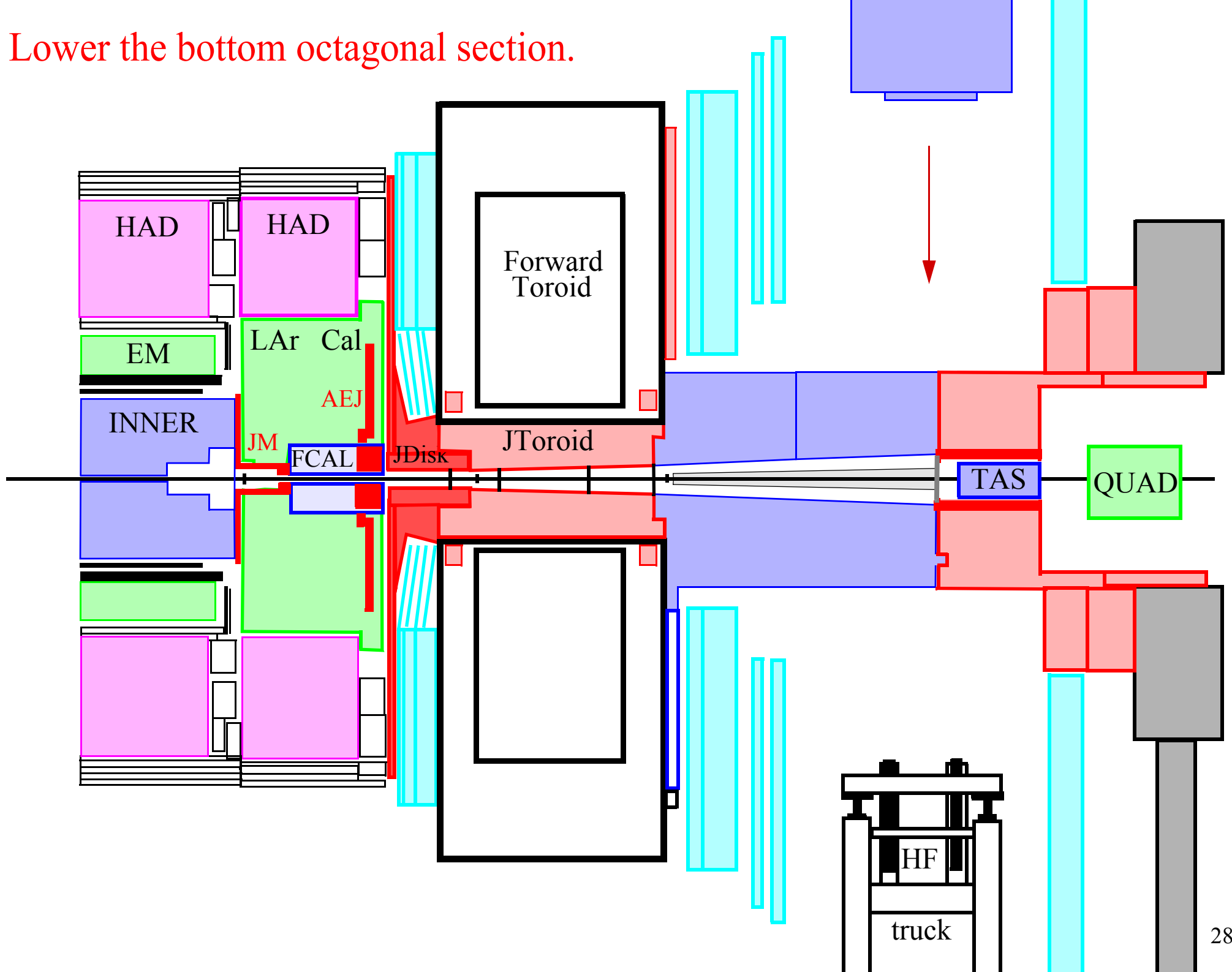
Is there enough crane reach for this operation ?

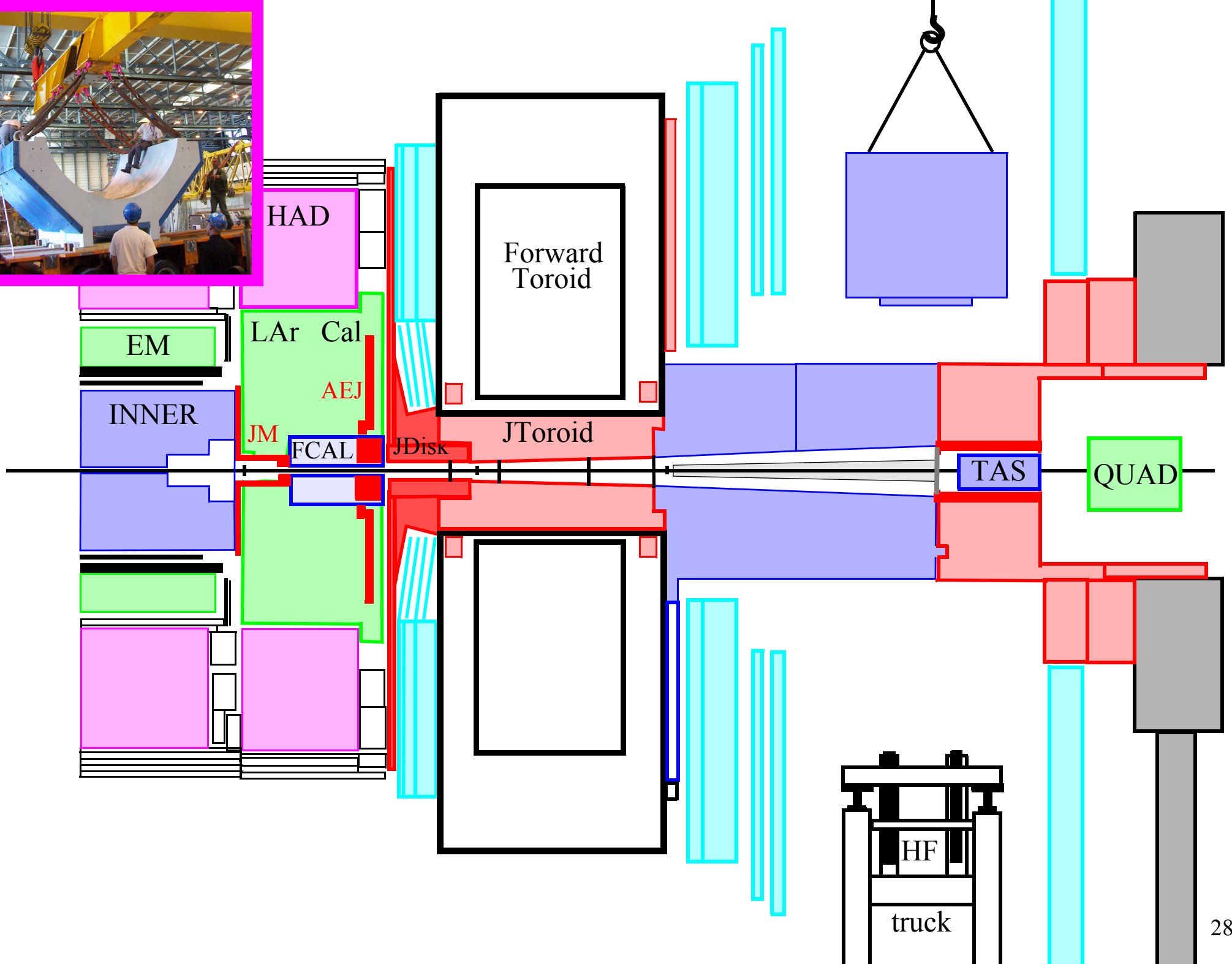


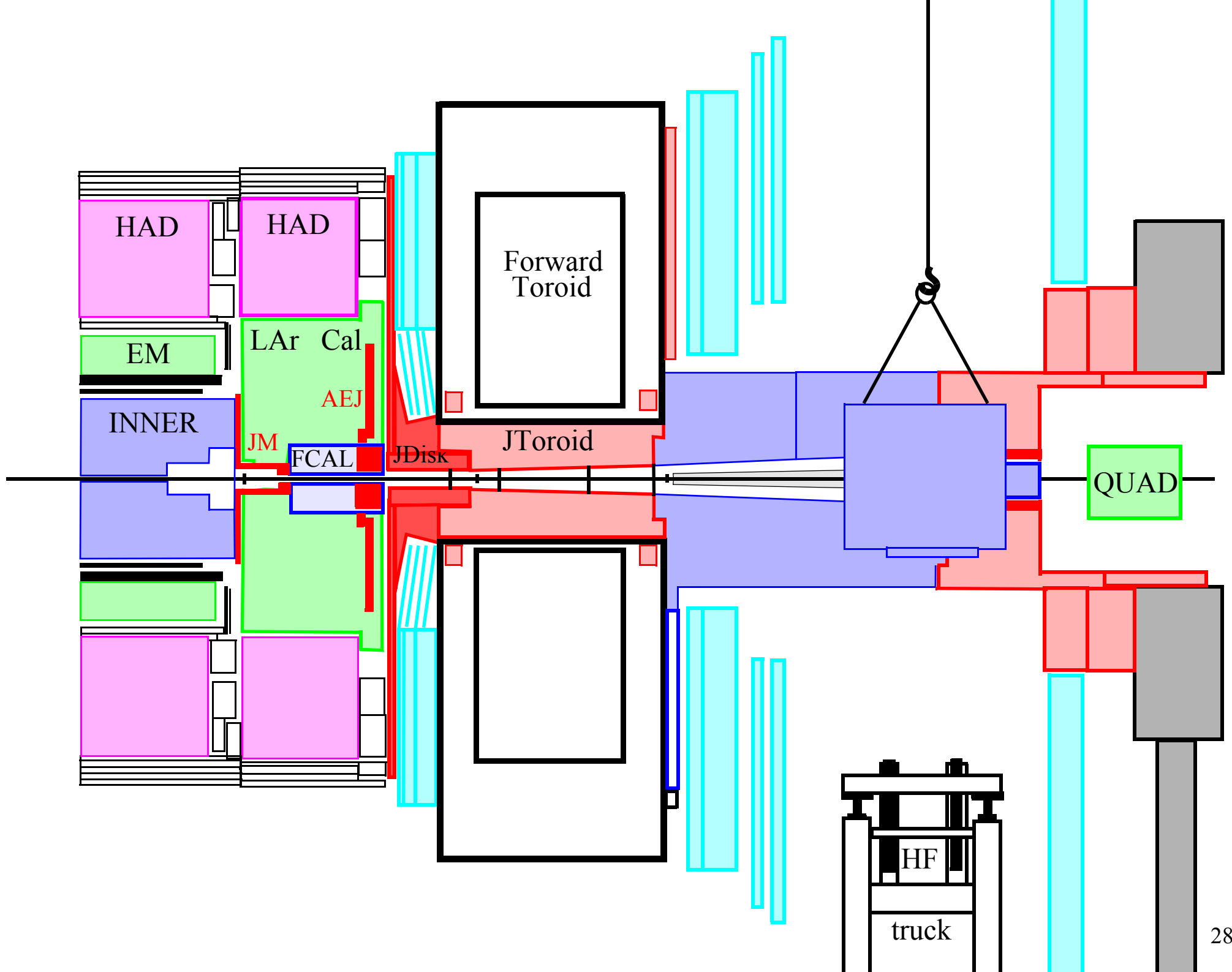


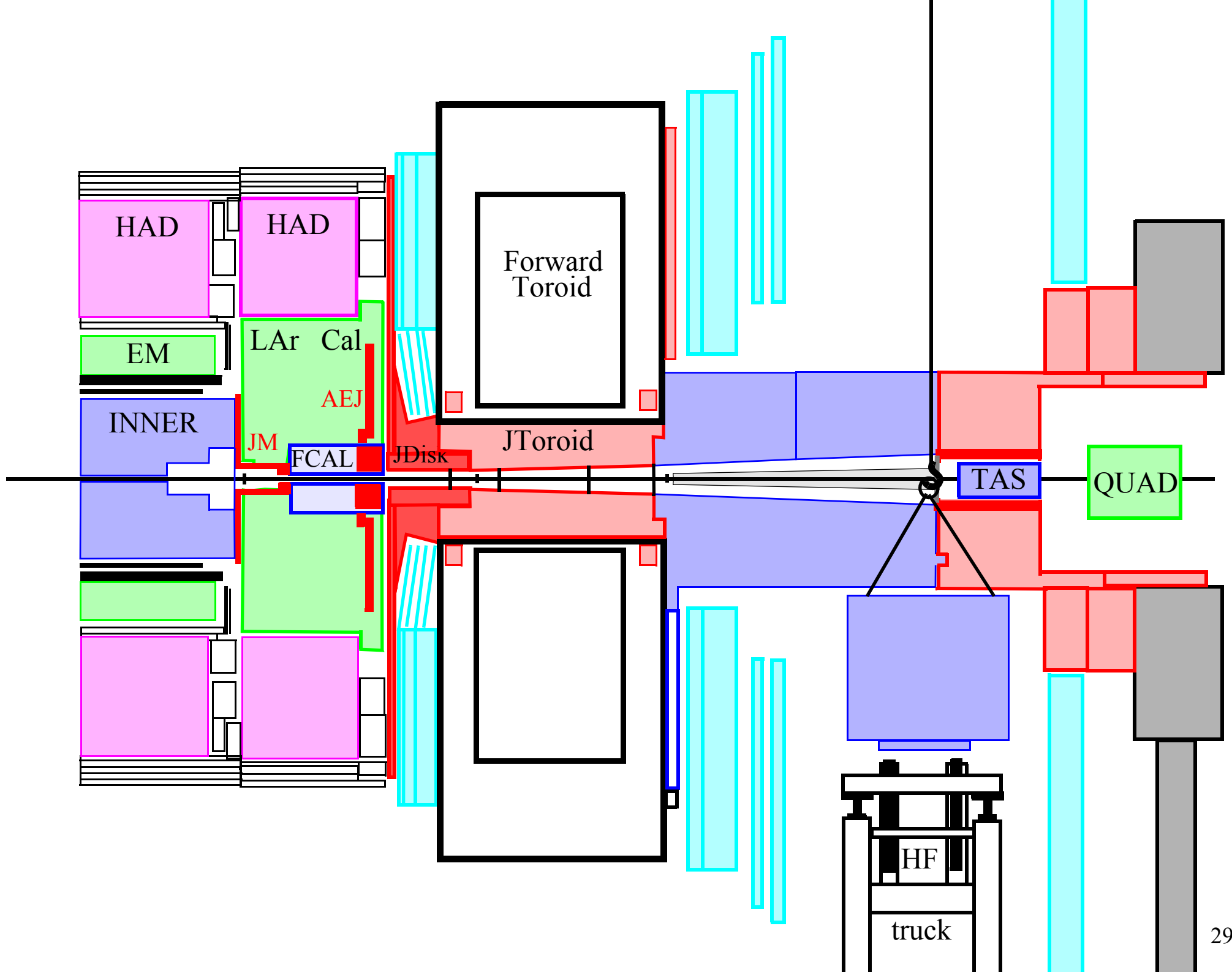


Lower the bottom octagonal section.

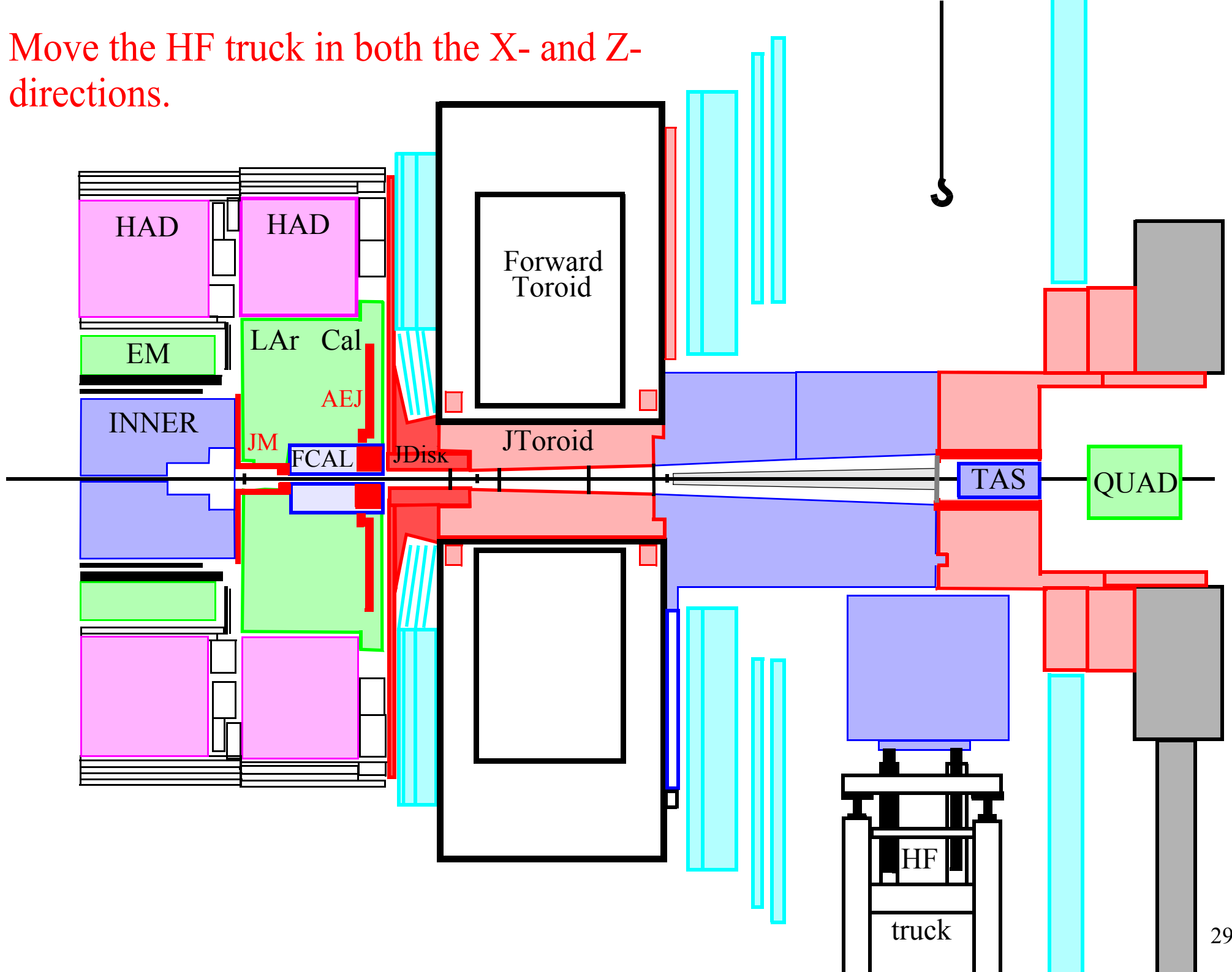


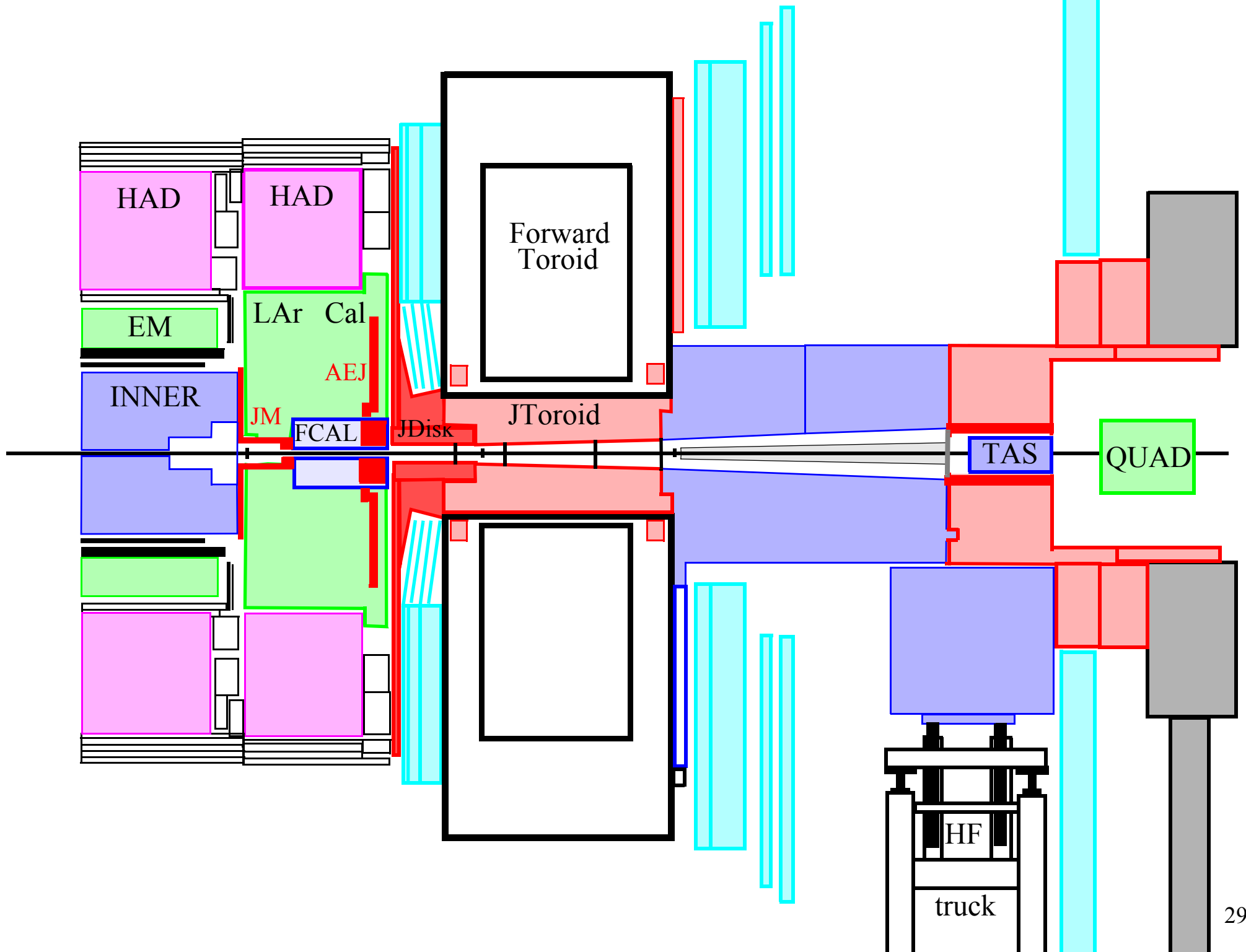




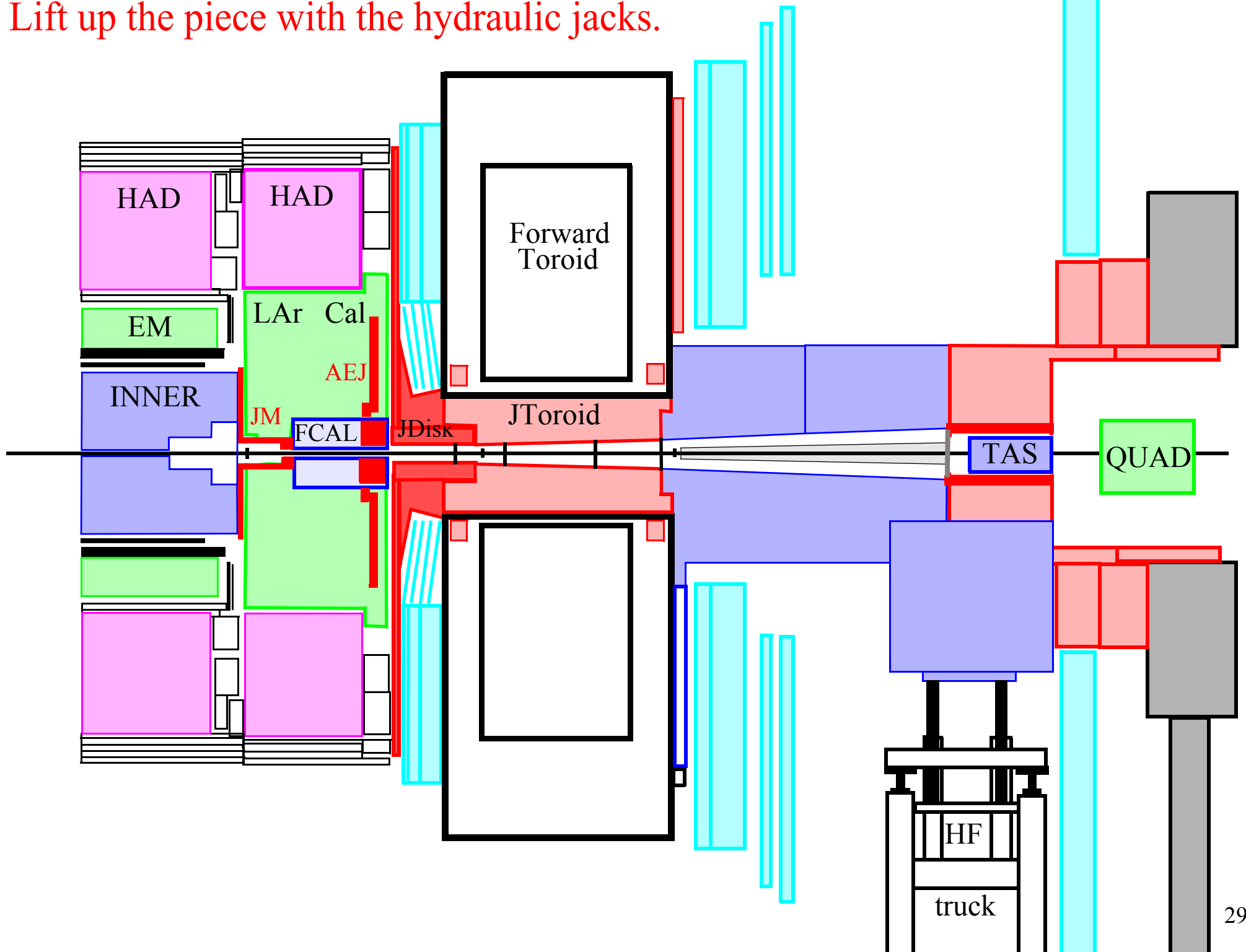


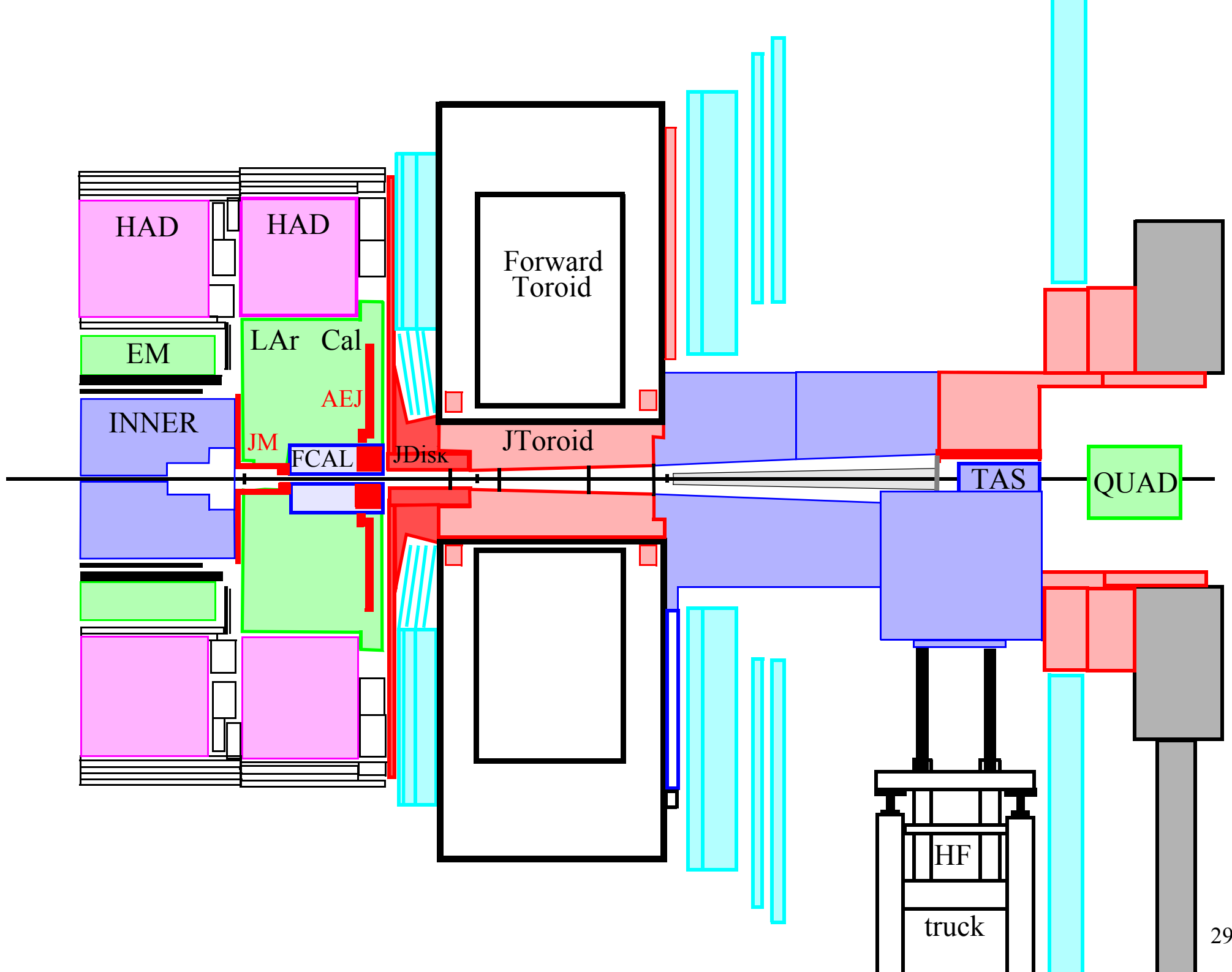
Move the HF truck in both the X- and Z- directions.

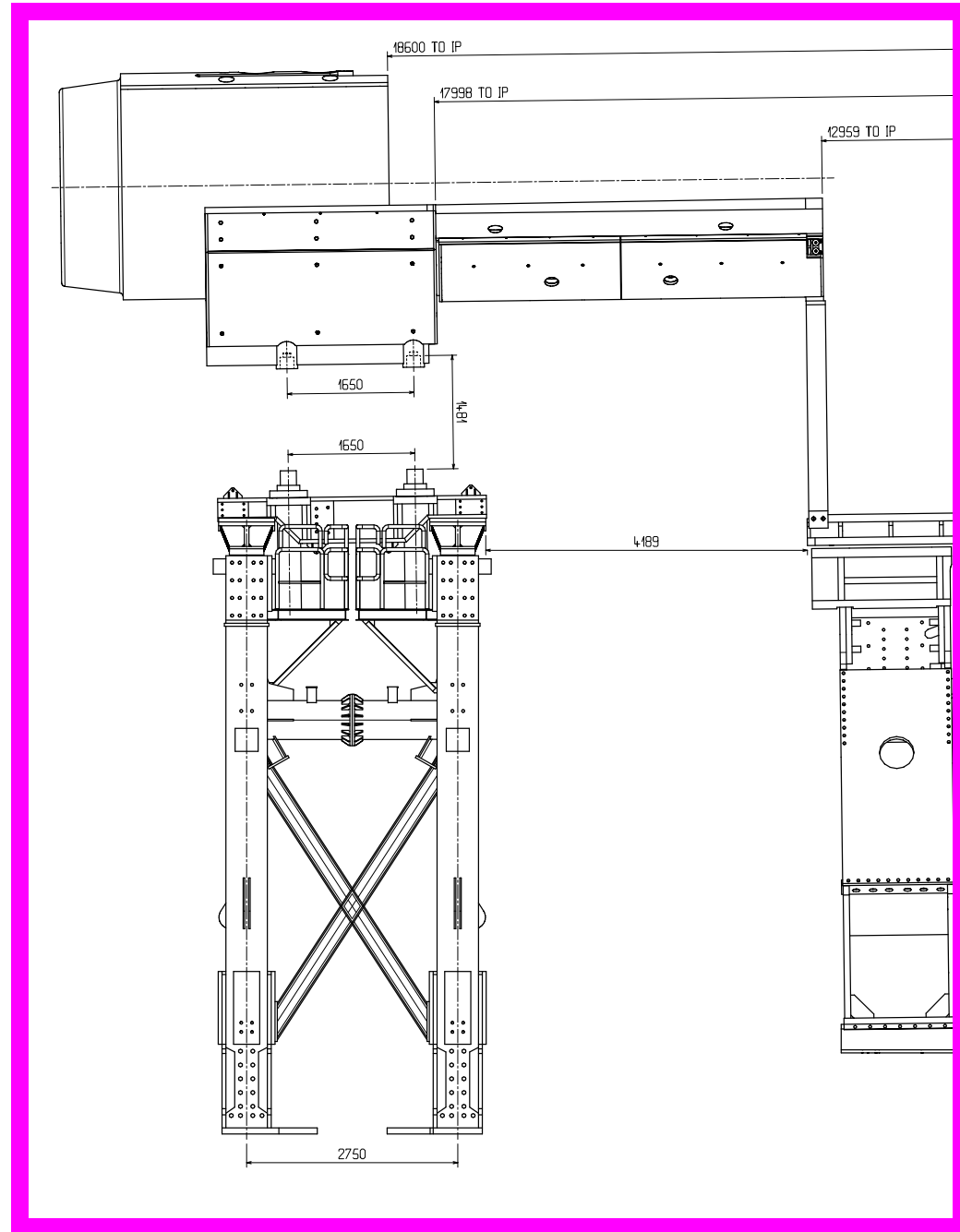
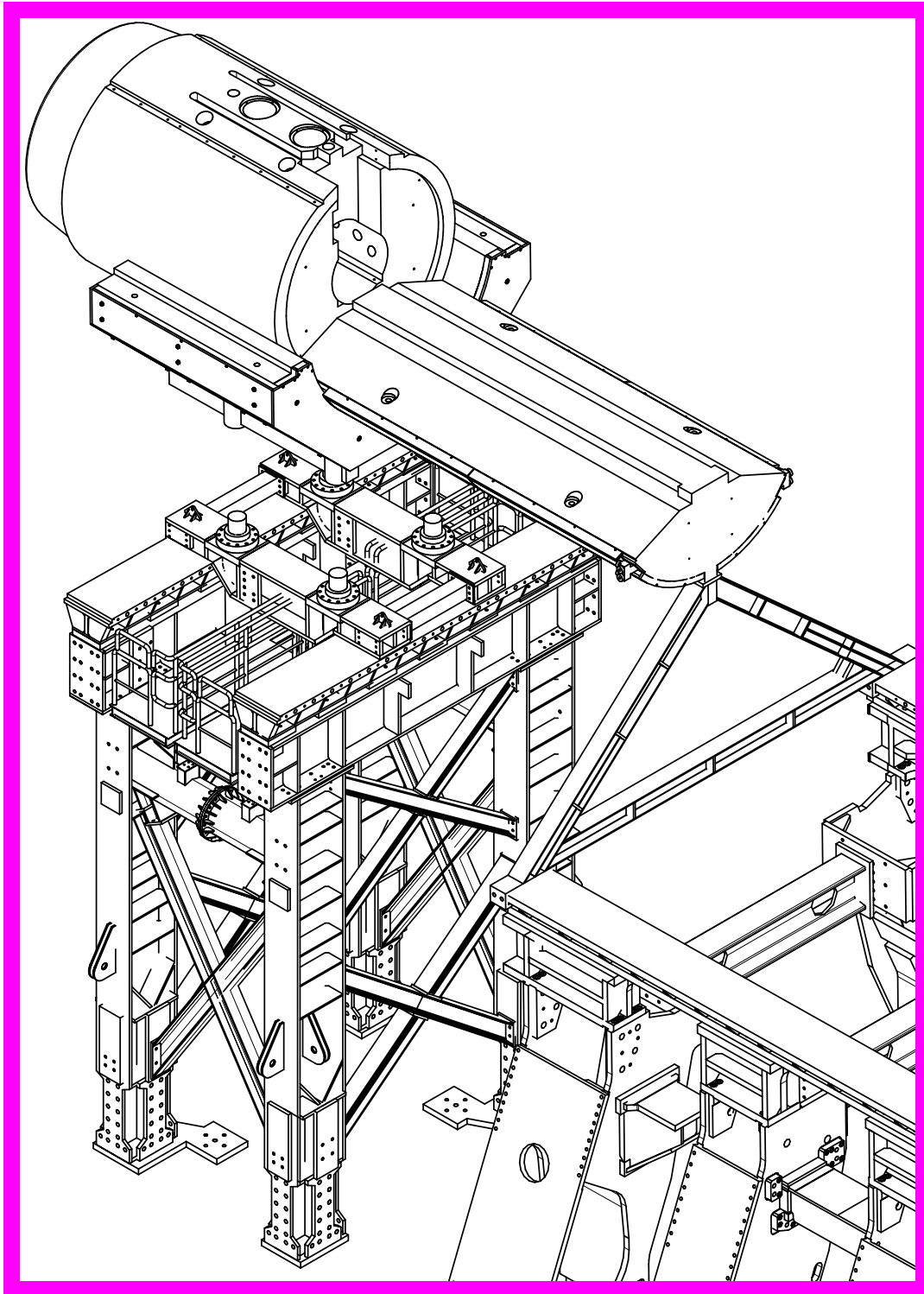




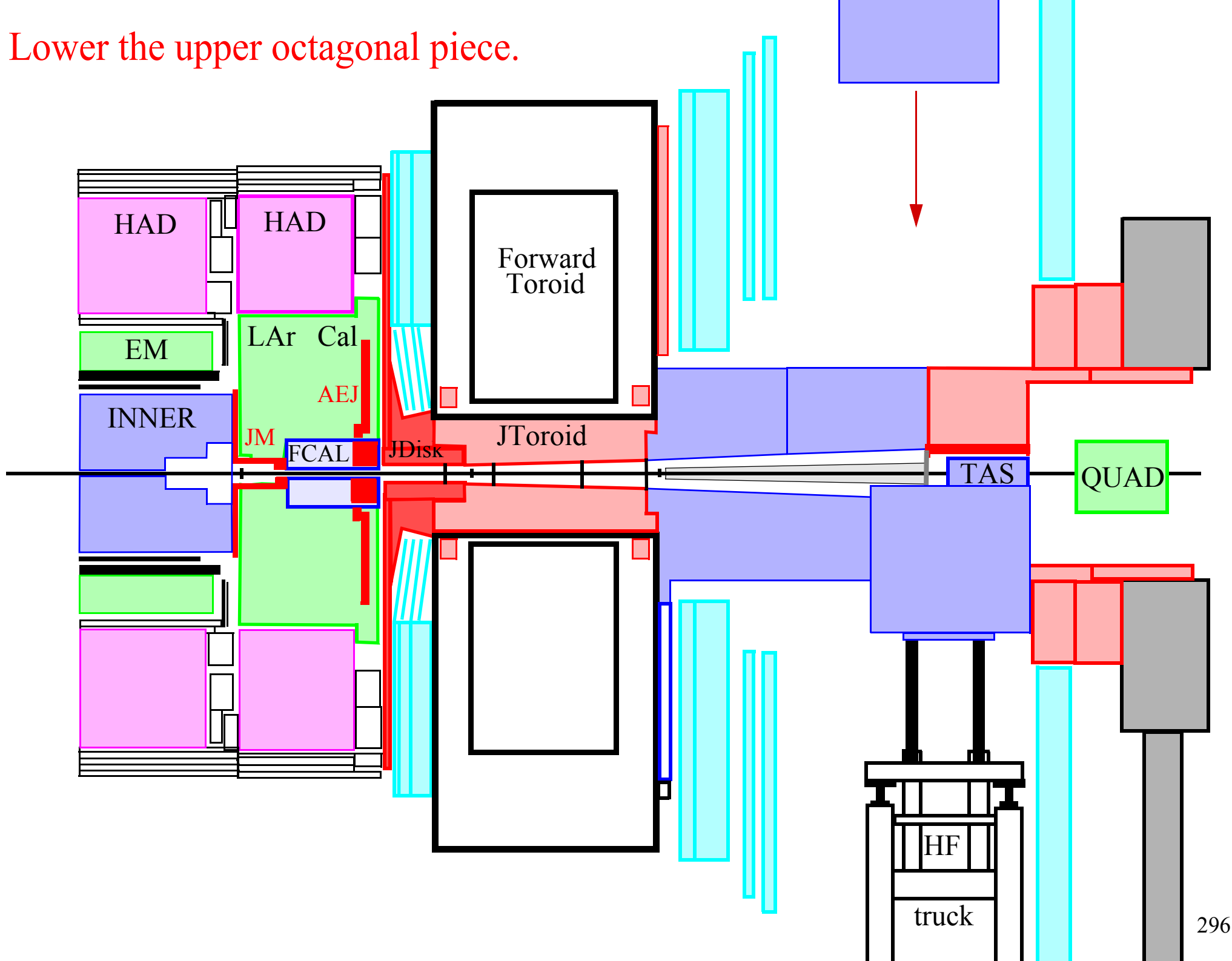
Lift up the piece with the hydraulic jacks.

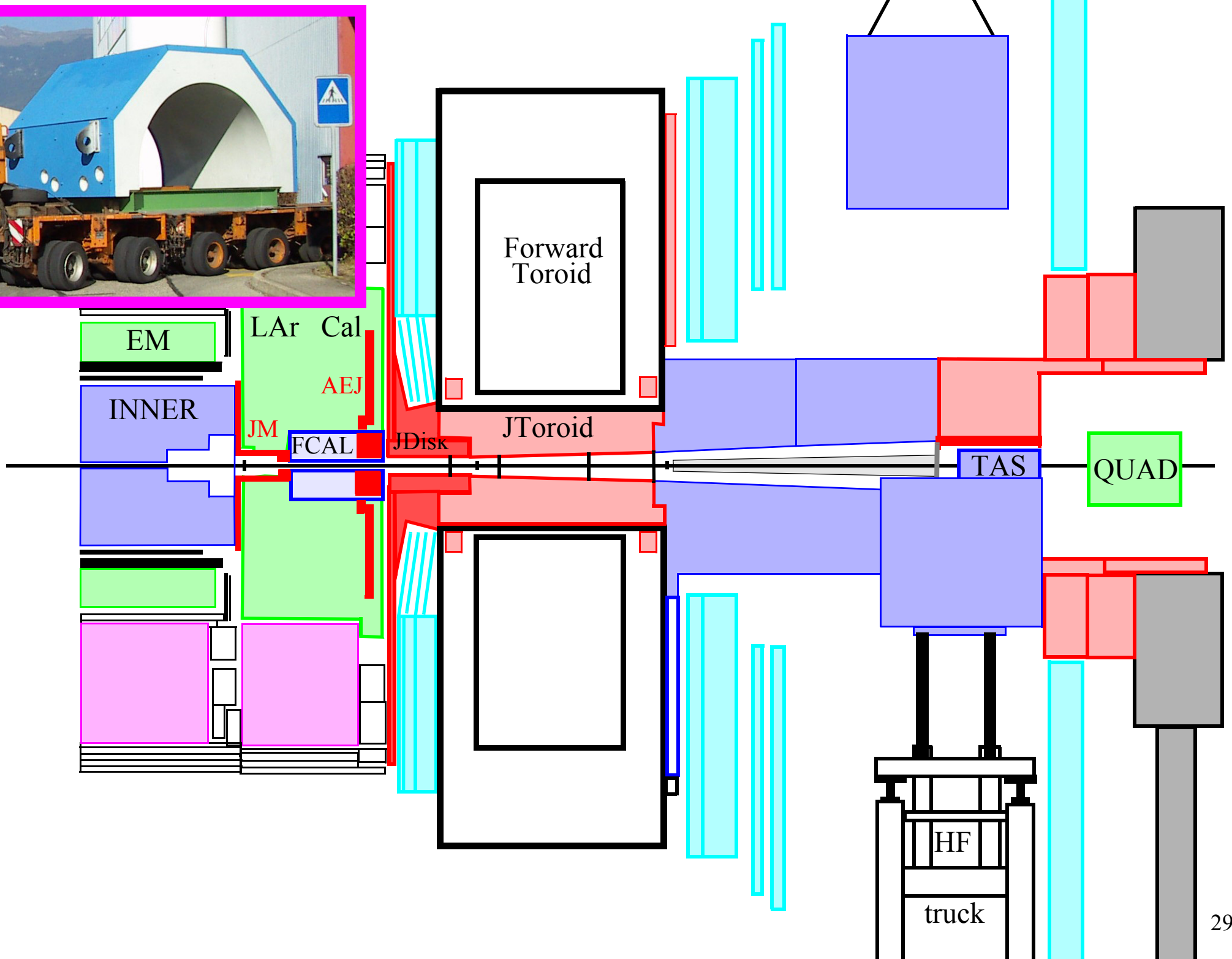


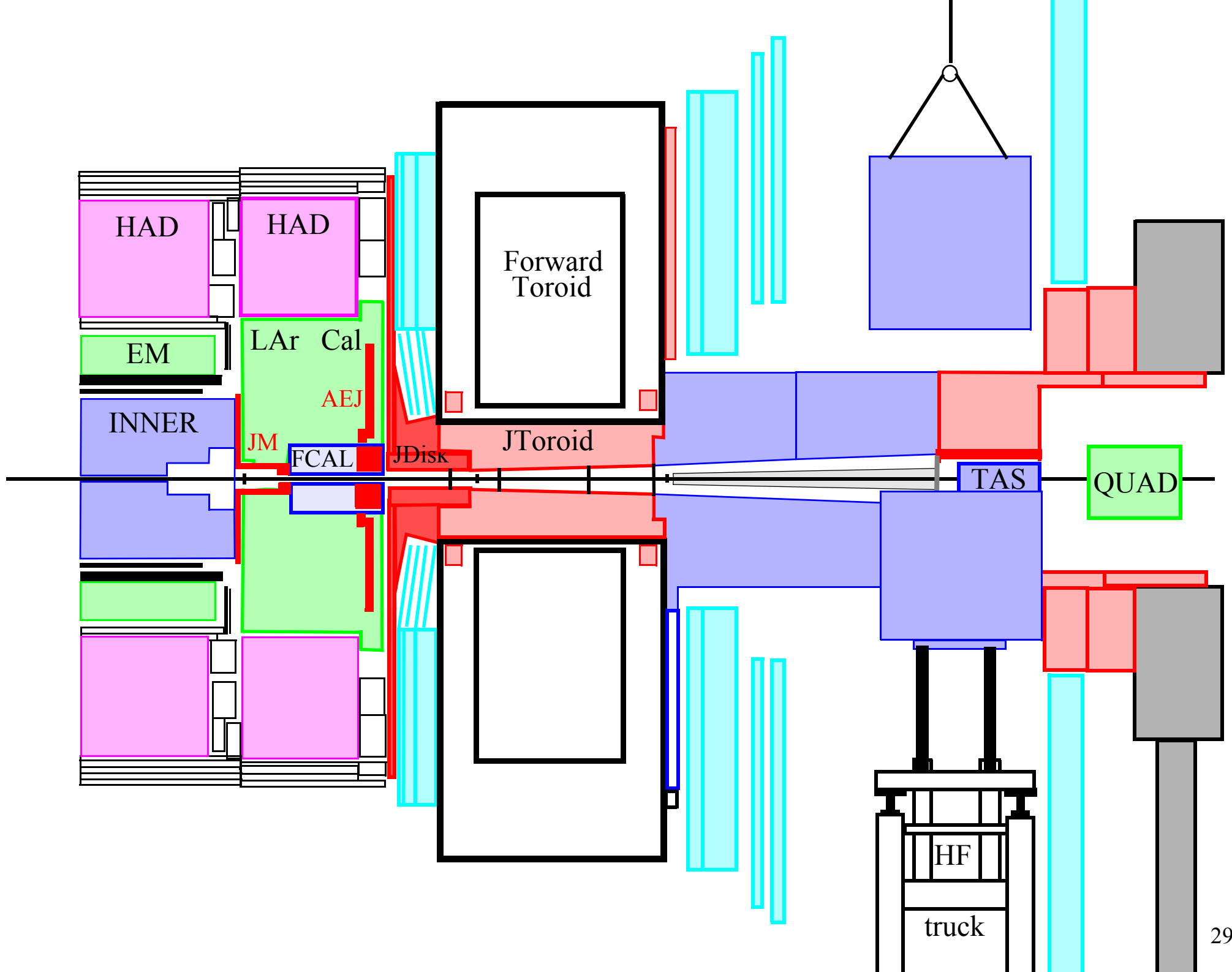




Lower the upper octagonal piece.







Is there enough crane reach for this operation ?

